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ABSTRACT

The issue of "Directions" contains nine articles which focus on activities and approaches to career education for hearing impaired students. Articles include the following titles and authors: "Attitudes as Factors in Vocational Rehabilitation of Young Deaf Adults" (R. Sanderson); "Career Education--Getting Ready for Today's Job Market" (R. Steffan, Jr.); "The National Project on Career Education--Past, Present, and Future" (D. Updegraff and J. Egelston-Dodd); "The Day School Program at Selaco-Downey High School" (C. Rowland); "Oregon's Regional Programs for the Deaf--A Statewide Career Exploration Project" (L. Fuhrman); "Two Determinants for Perceiving Parents as Influential in the Development of Occupational Goals for Deaf Students" (R. Meisegeier); "The Relationship between Teacher Expectations and the Occupational Aspirations of Seniors in Selected Residential Schools for the Deaf" (B. Walker); "Infusing Career Education into the Content Areas" (J. Maeder); and "Using Principles of Instruction and Evaluation in Infusion of Career Education Concepts" (N. Fones). A list of periodicals in career and vocational education, bibliographic data, and abstracts of career development resources from ERIC (Educational Resources Information Center), and information on documents in ERIC on the hearing impaired complete the issue. (SW)

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Directions

Gallaudet College

Career Development

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Purpose

Directions, a publication of Gallaudet College, provides professionals in the field of deafness with information important to the education and welfare of deaf people. *Directions* is a vehicle for disseminating innovative ideas, important papers, significant experience, and validated research findings, primarily originating on Kendall Green but interesting to the profession at large. It will update significant progress in academic studies, professional development, and research areas. The goals of the publication are to: (1) foster the continuing development of theory and practice, and (2) encourage extensive and thorough discussion of problems related to and drawn from such innovation.

Information for Authors

Each issue of *Directions* deals with a single topic identified as significant to the profession at large. *Directions* issues generally are planned by editors or guest editors many months in advance, and most of the articles are solicited from authors who have published original work on the topic. However, from time to time the journal solicits manuscripts on a particular topic from individuals outside the College community, either directly or through a call for papers. Manuscripts and editorial correspondence should be sent to Doin E. Hicks, Editor, *Directions*, Gallaudet College, Washington, D.C. 20002.

Manuscripts

For consideration for publication, an original manuscript and two copies must be submitted to the editor. Manuscripts must conform to standards set in the *Publication Manual of the American Psychological Association*, current edition, with respect to such features as:

- quality of paper (white bond only; no colors; no erasable paper)
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- abstract (a summary of the article, under 200 words)
- acknowledgments (including author's current affiliation, supporting grants, etc.)
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Policy

Manuscripts are reviewed on the basis of relevance of the article to the theme of the issue, acceptability of illustrations, accuracy in references, and completeness in content. Authors should make every effort to avoid the use of sexist terminology. Guidelines for the use of non-sexist language are available from the American Psychological Association, and from the National Council of Teachers of English (NCTE), 1111 Kenyon Road, Urbana, Illinois.

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Introduction

Richard C. Steffan, Jr.
Charlotte Hawkins-Shepard

"Why do I have to learn this?" Countless school children through the ages have asked teachers and parents that question. Perhaps more familiar to teachers of deaf students is the shorter query—"What for?" Those who subscribe to the viewpoint that the goal of education is preparation for work can more easily make a helpful response.

Career education—the focus for this issue of *Directions*—is the link between education and work. Certainly career education is not a curricular science, there is no one right way to present it. When Sidney Marland introduced the concept of career education in 1971, he urged that it be defined, not by the U.S. Office of Education, but instead, by scholars and practitioners. Some have since advocated that career education be integrated into the curricula of existing courses. Others have championed an experience-based approach. Clearly, career education will be somewhat different in every school.

We are experiencing a time when federal support of career education is ending due to the consolidation of career education project grants into the Elementary and Secondary Education Block Grant. Nonetheless, exemplary programs that gained impetus from such support are in evidence throughout the nation. Professional exchange of information continues in forums such as the International Conference on Career Development of Handicapped Individuals, which was held last fall by the Council for Exceptional Children (CEC) Division of Career Development. We see the continued expression of innovative ideas and practices such as one offered by Krumboltz at the last Educational Testing Service (ETS) Invitational Conference—the development of instruments to identify and correct cognitions leading to faulty career decisions.

This issue of *Directions* highlights some activities and approaches to career education for hearing-impaired students. Offered for readers are reports of recent research, program descriptions, information on the National Project on Career Education (a program jointly sponsored by the National Technical Institute for the Deaf and Gallaudet College), position papers on instruction and approaches, a description of career education periodicals, and a new column featuring Educational Resources Information Center (ERIC) documents that are useful to professionals working with hearing-impaired individuals.

Attitudes As Factors in Vocational Rehabilitation of Young Deaf Adults

Robert G. Sanderson

Joe T.[1] was well trained and demonstrated high competence in welding. He was at the top of his class in technical school, and while he had problems with English language typical of a prelingually deaf person, he was nevertheless able to understand the texts and learned easily and quickly by watching demonstrations. His instructor's report to the rehabilitation counselor noted, however, that he was impatient with other students. He was fired after only two weeks on his first job.

Joe came to his rehabilitation counselor with the story that the supervisor did not like deaf people. Joe said that the supervisor gave him a lot of dirty jobs, like sweeping the floor, and that his co-workers were stuck up. The Rehabilitation Counselor for the Deaf (RCD), being a pragmatist and a practitioner of the reality therapy approach, and knowing the good record of that particular industry on hiring disabled people, decided to check the situation immediately. On calling the foreman, he learned that Joe's *attitude* was the real reason. He would not accept orders, refused to clean up his own work area, and wanted to do jobs his own way instead of the way the foreman instructed him. The quality of his work was good when he did get it going right, and he was fast. Maybe he learned a lot of new wrinkles in technical school, but when he tried to tell his co-workers how to do their jobs, it really turned them off. So after two weeks they had to let him go. Sorry; and of course they understood that deaf people are just like everyone else, some good and some not so good, and they would consider others who would demonstrate better ability to get along.

A host of problems appear in this deceptively simple story that every RCD is familiar with. Some of the problems begin at home, where the clay is molded; others arise during the early educational and social experiences; still others may be laid at the door of the career counselor or the RCD.

Every professional should be aware of the old adage, "Children learn what they live," and be equally aware that two children (or eight, for that matter) from the same family may develop completely different personalities. Even twins can come up positive and negative. So the astute counselor accepts what is and tries to work with what is there, knowing that the home, peers, and school have helped shape the client in ways that must be discovered and dealt with.

Personality is complex and may be viewed from the holistic perspective. In this view, attitudes, however numerous, are merely facets of the personality. Attitudes may be changed or modified by a working practitioner who selects an appropriate approach if the client agrees that such is necessary to reach a mutually agreed upon goal. For some deaf people, frequently the goal must be concrete and attainable, and the objectives along the way must be specifically related to it.

One might immediately think of work adjustment and personal adjustment in Joe's story. Was the client *evaluated* carefully prior to being placed in training? Did the RCD *follow up* during training to see whether adjustment training had taken effect? During work and personal adjustment training, was communication *effective* between the client and the trainer? Did a report from the trainer or training facility include *attitudinal* problems and what had been done to alleviate them?

It is quite common for an RCD to develop a gut-level feeling for deaf clients and jump into a program without thorough evaluation, trusting to judgment and luck. It is also quite common for the best of the RCDs to get fooled regularly by a confident, self-assured manner, or a pair of bright blue eyes framed by golden, wavy hair and a peaches-and-cream complexion. But really, what could such instinctive judgment reveal to a counselor about an individual's *attitude* toward work? Did the client's parents convey their own positive or negative feelings toward their jobs? Were siblings lazy or industrious? Did the family communicate the joy of finding a job and holding it, and the agony of budgeting the limited income against the numerous desires (bicycle, car, skis, dating)? Or did the parents complain about their bosses every evening at supper time, or bounce from job to job always seeking the "right one"?

While in school, how did the client relate to peers, teachers, and the principal? What happened during career counseling? Did the client have a good self-concept, or did he or she attempt to deny deafness and try to relate to hearing peers in establishing identity? Did achievement meet parental and school expectations?

A vital aspect of occupational selection is the determination of what the individual, whether young or mature, really needs and wants from the job. Is it money only, or is it a sense of accomplishment, being a significant member of the organization, or recognition? It may be legitimate to ask the RCD whether she or he really engaged in counseling or was looking just for a placement and a quick "26" closure[2] to appease the incessant demands of the rehabilitation administration for greater and greater numbers of closures to report to

1. Names, occupations, and circumstances have been completely altered to prevent identification, but are based on actual or composite incidents.

2. A "26" closure is a successfully rehabilitated individual in the sense that services resulted in productive, gainful employment.

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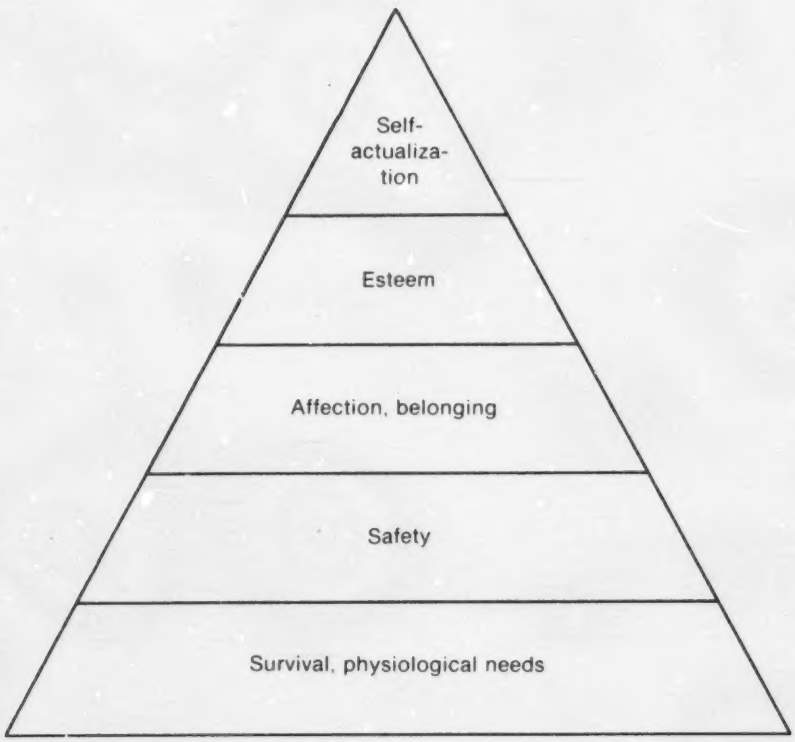
"...a deaf adult who is in immediate need of a job or quick retraining may not have the luxury of such a facility...."

Figure I
A Hierarchy of Basic Needs



Note. Adapted from Maslow, A.H. (Ed.). *Motivation and Personality* (2nd ed.). New York: Harper & Row, 1970.

Washington. Or whether, in the face of an active, too heavy caseload, the RCD unconsciously neglected casework and counseling and became just a purchaser of services and a placement specialist. Yet, in balance, such considerations, apart from all the others, may spell the difference between success and failure on the job.

Perhaps it would be well for career counselors and rehabilitation counselors for the deaf to keep in mind Maslow's (1970) hierarchy of needs. It does not take much examination to see that the needs of a person in the workaday world fit very well into this hierarchy.

The work of the RCD is made much easier if a career counselor has given a deaf youth information about the world of work. This is especially true if the youth has tentatively decided on an area of interest or a specific occupation. Such information enables the RCD to guide the youth into technical training, on-the-job training, or further education.

Career counselors, generally, are engaged by and work in schools; they are attuned to the needs of children and youth. However, deaf adults who have not had career counseling present an entirely different challenge. Certain metropolitan areas do have career counseling facilities for adults, but the average field rehabilitation counselor for the deaf, faced with a deaf adult who is in immediate need of a job or quick retraining, may not have the luxury of such a facility nor that of time. Hence, it may fall to the RCDs to add career counseling to their repertoire of skills. They may also have to develop a library of materials relating to occupational requirements, with a strong emphasis on visuals.

Empirical research on attitudes as factors in the vocational rehabilitation process of deaf adult clients is exceedingly scarce and may offer a fertile field for investigation. However, a number of articles (Vescovi, 1973; Sanderson, 1973, 1979; Bolton, 1973, 1975) have appeared in journals and workshop proceedings. Obviously, more questions have been asked than answers have been provided in the preceding discussion, and this may give emphasis to the need for more research.

The Deaf Community

The *deaf community*, as used here, refers to those deaf people who have had similar educational experiences; who use American Sign Language (ASL) or its variants for communication among themselves; who are organized socially, formally or informally; or who gather in meetings occasionally or regularly in response to deaf media calls. (Sign language, it should be noted, is not the only polarizing influence; oral deaf people

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"Career counseling and attitude changing may present vastly different problems."

do gather for social purposes and must be included in the broad definition of the deaf community.) Such a definition, however, does not include those people who may have lost their hearing after a normal educational experience in the public schools, after age 19, or later in life, or those who have little or no contact with other deaf people. Such people are also described as being postvocationally deaf (Schein & Delk, 1974).

The RCD may be the last resort for significant help for many deaf adults who are not candidates for technical or professional training, or who cannot obtain further education because of their life circumstances. This fact cannot be emphasized too strongly. The quality of help these deaf adults receive will echo throughout the deaf community. Inexperienced counselors or general counselors who have only a few deaf clients may sometimes overlook the fact that the deaf community as defined earlier is indeed compact, especially in the smaller cities. It is thus almost a dead certainty that Joe T. will tell his friends about his experience with Rehab, and everyone will know how well the counselor communicates, and whether he or she is a tough nut or an easy mark. Joe T., and every other deaf person who receives help or does not, is a public relations expert.

While the focus of this article has been on the complexities of Joe T.'s job problems and his attitudes, it is hoped that the RCD will be able to differentiate between him, a member of the deaf community, and a postvocationally deaf person who has similar problems, but who is not a member of the deaf community as defined. Career counseling and attitude changing may present vastly different problems.

It may be well to mention some of the attendant problems (cultural differences, socioeconomic status, minority dynamics, sex differences, multiple disabilities, if present, and state and federal regulations), give the RCD a pat on the back, and leave with a cheerful "Good Luck!"

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Career Education: Getting Ready for Today's Job Market

Richard C. Steffan, Jr.

"The company began in 1979 with three employees and now employs more than 65," bragged an advertisement for Integrated Microcomputer Systems, Inc. in a recent issue of the *Gallaudet Alumni Newsletter*. The ad's writer has every right to boast about the enormous success of his company, for he is profoundly deaf. He and other deaf persons have discovered an entirely new avenue of career choices with the relatively recent advances in computer technology. Prior to the 1960s, most young deaf adults had limited career choices, and often chose trades—such as printing—by default.

A History of Underemployment

Professionals have long struggled with the focus that career education should take in schools and programs for deaf persons. Historically, many state and private schools for deaf students provided prevocational training that too frequently limited the employment opportunities of their graduates.

Results of the National Census of the Deaf Population (Schein & Delk, 1974) have suggested that deafness need not impede employability. Deaf individuals, according to the census, were employed in all major occupational clusters from professional to domestic. The largest proportion (29.7%) of deaf workers was found in the area of manufacturing of nondurable goods. Smaller proportions occurred in manufacturing of durable goods, retail trade, and professional and related services.

The National Census also revealed that deaf persons were overrepresented as crafts people, machine operators, laborers, and farmers. They were substantially underrepresented as managers, officials, and proprietors. In addition, deaf workers were underrepresented in the professional/technical, clerical, sales, and services areas.

Schein and Delk limited their survey to prevocationally deaf adults. Prevocationally deaf persons (i.e., those persons who could not hear and understand speech and who had lost —or never had—that ability prior to 19 years of age) comprise approximately 200 out of every 100,000 persons in the United States. The majority of prevocationally deaf persons belong to a cohesive subculture. This culture has social, emotional, linguistic, and intellectual patterns and problems that are inextricably bound together by the common variable of deafness (Meadow, 1975). Characteristics of the deaf subculture include the following:

1. Deaf people tend to join voluntary organizations comprised primarily of deaf members. A large number of these organizations are found in every metropolitan area of the United States. They include a national deaf sports organization that participates in the Deaf Olympics, insurance companies, fraternal organizations, religious groups, and social clubs.
2. A large percentage (95%) of deaf people marry other deaf people.
3. Innovative activities have developed that maintain the culture or instill pride in the culture (i.e., the National Theatre of the Deaf and television broadcasts using sign language).
4. There is a long tradition of educating deaf children in state residential schools for the deaf. These schools have helped transmit and maintain the deaf subculture by giving deaf persons a sense of belonging to an "in-group."
5. American Sign Language (ASL or Ameslan) is used by 75% of deaf persons in the United States at some time during their lives. This language is often the native language of deaf persons (p. 16).

To Meadow's definition of the deaf subculture could be added a sixth characteristic: Deaf persons traditionally have followed career paths that limit them to a lifetime of underemployment. However, in the past ten years, increasing numbers of deaf workers have achieved higher occupational levels. Today, there are more prevocationally deaf persons who are college graduates and more who have earned a Ph.D. This attainment can be attributed partly to enactment of legislation such as the Rehabilitation Act of 1973 (PL 93-112) and its 1974 amendments (PL 93-516), the affirmative action movement, the growth of advocacy groups, and the establishment of such postsecondary programs as the Program for Deaf Students at the St. Paul Technical-Vocational Institute and the National Technical Institute for the Deaf in Rochester, New York. In addition, the growth of social consciousness movements in recent years, along with deaf awareness activities, may have contributed to the development of greater self-esteem in deaf persons, and thus led to their demand for a larger slice of the employment pie.

Career Goals and Choices

By the mid-1960s, federal grant programs encouraged social science research as never before. One area of federally sponsored study related to the career aspirations of deaf youth and the influences upon their career choices. Although this area of research is no longer a priority for federal funding, professionals have continued to conduct empirical research to determine how deaf youth formulate their career goals.

An important study (Meadow,

1967) concentrated on the material and subjective resources that both deaf and hearing families bring to the task of rearing a deaf child, as well as the child's eventual adjustment to and definition of self as a deaf person. Using an index of family climate, which combined indicators of socioeconomic status with those of internal family stability or cohesion, Meadow evaluated factors that contribute to the deaf child's self-image and social, intellectual, and communicative functionings. Critical environmental influences on the academic performance of deaf children were investigated in relation to family structure and family processes. Families that received high ratings for family climate were found more likely to have higher educational and occupational achievement. In 1967, 3% of deaf fathers sampled were engaged in white collar occupations as compared to more than 50% of hearing fathers sampled.

Family expectations for occupation and education were also considered in Meadow's study. Approximately 85% of the parents expected their deaf children to obtain high school diplomas. Sixty-five percent of the parents wanted postsecondary education for their deaf children. Both deaf and hearing parents responded similarly regarding educational goals for their children. However, 29% of the hearing parents sampled hoped their children would obtain college training, as opposed to only 18% of the deaf parents.

The identification of the printing occupation as a career goal that deaf parents have for their deaf children historically was due to the large percentage of deaf persons employed in that trade. No hearing parents named printing as an expected occupation for their deaf children. This suggests that parents transmit career goals that most closely approximate those parents' present occupational attainments.

Table 1

Parents' Occupational Expectations for Their Deaf Children

Occupation	Deaf Parents		Hearing Parents	
	%	*n*	%	*n*
Teacher	47	14	14	4
Other professional or semiprofessional occupations (artist, draftsman)	13	4	18	5
Printer	13	4	0	0
Other skilled trade	3	1	21	6
Clerical or service occupations	10	3	18	5
"Whatever child wants" or "Whatever child is suited for"	13	4	29	8
Totals	99	30	100	28

Note. From *The effects of early manual communication and family climate on the deaf child's development* by K. Meadow. Unpublished doctoral dissertation, University of California at Berkeley, 1967. Reprinted by permission.

In terms of parental expectations, deaf and hearing parents showed definite differences. Almost one-half of the deaf families expressed the hope that their deaf children might become teachers of the deaf, while only 14% of the hearing parents desired that occupation for their deaf children. Of hearing parents in the sample, 29% favored their child's choice while only 13% of the deaf parents did so.

Meadow's findings further substantiated those of an earlier study by Rosenstein and Lerman (1963). In that study, parents of deaf women were interviewed to determine which factors influenced their deaf daughters' vocational status and adjustment. Parents emphasized job factors relating to pay and social interaction. They rated their daughters' job satisfaction lower than did the daughters themselves. The study also revealed that some parents, regardless of their daughters' age, played an important intermediary role in the career choices made by their deaf daughters. Parents viewed the school as the primary agency for training and educating their deaf daughters. Although parents did not understand fully the educational program offered at their daughters' schools, they maintained a sense of trust in the school for channeling the children's occupational skills in the appropriate direction. Today, many parents still feel that the school knows best when determining their children's career choices (Steffan, 1980).

Parental perceptions of influence on the career goals of their hearing-impaired adolescents as a function of a number of variables have been studied by Steffan (1980). Parents in the study reported influencing and encouraging their sons more than their daughters. They reported believing that they should help their

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"Parents are perceived as influential in the development of their deaf children's career goals...."

deaf children to determine career goals, and a significant number of parents indicated that they had career goals for them. Parents also reported tending to help their deaf children determine career goals. Regardless of attitudes toward school, parents believed they knew their deaf children's goals. They also tended to depend on assistance from the school in planning for their deaf children's future. English, communications (speech language, sign language), and mathematics were deemed the most important subjects that the school could provide.

Parents are perceived as influential in the development of their deaf children's career goals, according to a study by Meisegeier (1982). Both Steffan and Meisegeier found that parents and children alike perceive parents as influential in the children's development of career goals. Additional research, however, is needed in this area.

The occupational status of young deaf adults in New England was investigated by Boatner, Stuckless, and Moores (1964). Their investigation yielded the following data:

1. Young deaf adults were underemployed.
2. Wages of young deaf adults were below those of hearing siblings.
3. Training received in school did not prepare the young deaf adults for the current job market.
4. The deaf adults' unemployment rate was four times greater than that of all New England.
5. Of 840 possible occupations, 753 were found suitable for the deaf adults.
6. Most of the 840 occupations were unavailable to the deaf adults because they were not trained for them.
7. Vocational counseling and placement services were lacking for young deaf adults.
8. Immediate supervisors of 95% of the employed deaf adults gave them an average or better than average on-the-job rating.
9. Difficulties with communication was the problem most noted by supervisors.
10. The majority of deaf adults and their parents approved the concept of regional technical-vocational centers at the post-secondary level.

The results of this study led to another by Kronenberg and Blake in 1966. Both studies emphasized the need for regional centers where vocational training could be provided to deaf youth. All ancillary services, including vocational counseling, were to be provided so as to ensure reasonable success in the job market for these deaf adults.

Parents of both unemployed deaf males and deaf females included in Kronenberg and Blake's sample indicated that most occupations to which deaf youth have aspired are related to the type of school training courses offered or to jobs already filled by other deaf persons. Of the parents sampled, 44% preferred that their deaf children's postsecondary vocational and or technical training be provided by educational programs for hearing persons and not by schools for the deaf. Parents wanted special staff who were able to work with deaf students hired by these programs for hearing persons. This preference would seem to indicate that parents wished their deaf children to pursue occupations more closely related to those of the hearing society and not those of the deaf subculture.

With the enactment of the Education for All Handicapped Children Act of 1975 (PL 94-142), parents who were involved in the study by Kronenberg and Blake could have been afforded their desire to have their deaf child educated in the mainstream. Section 504 of the Rehabilitation Act of 1973 also supports the deaf person's right to have a free, appropriate education in the least restrictive environment. Today's deaf child ideally could be educated in a school designed for hearing students, with the appropriate support services.

The need for schools to develop strong career development programs for deaf youth is quite evident. Care must be taken in schools for the deaf not to isolate their students from the broader society. Deaf students in the mainstream of education are often isolated from the real world due to a lack of communication with peers and teachers. According to McHugh (1975), a deaf person lags vocationally from the beginning of life, primarily because communication does not develop in the normal casual way it does in a hearing person.

Intelligence, middle class environment, language competency, intellectual-aesthetic atmosphere, and adolescent independence were factors used to compare hearing and deaf adolescents' level of prevocational behavior (Lerman & Guilfoyle, 1970). It was found that deaf subjects of all ages chose jobs at lower socioeconomic levels than did their hearing peers. These jobs tended to cluster at the semiskilled and unskilled levels. Most of the job choices could be characterized as traditionally "deaf jobs" such as printing. They found that both the type and level of the deaf adolescent's vocational preference became stabilized at a relatively young age. It is likely that ideas about work were passed from deaf adults to older deaf students who, in turn, passed these ideas on to the younger deaf students (i.e., transmission of work values through the deaf subculture).

With the exception of the socio-

"...the vocational maturity of deaf adolescents is primarily an outgrowth of language competence...."

economic variable, none of the other determinants appeared to relate to the vocational preferences of either hearing or deaf adolescents. However, socioeconomic status and the level of preference relationship appeared weaker for deaf adolescents. This discrepancy may be due to the relative paucity of contact between the deaf adolescents who live in a residential school and their families (Lerman & Guilfoyle, 1970). More residential schools are now encouraging interaction between child and home (e.g., the Maryland School for the Deaf sends all students home every weekend and on major holidays throughout the school year; the Model Secondary School for the Deaf sends students home once each month).

Communication in the home has been reported to be ineffective and inefficient. The deaf child is often isolated from other members of the family because of his or her handicap. It was found that deaf students with better communication skills and reading proficiency than their deaf peers were vocationally closer to their hearing peers and tended to aim for higher vocational levels. Lerman and Guilfoyle concluded that the vocational maturity of deaf adolescents is primarily an outgrowth of language competence and the cultural stimulation received from parents.

A significant positive relationship between teacher expectations and student aspirations at two schools for the deaf has been found in a recent study (Walker, 1979). Student aspirations were significantly related to reading comprehension, IQ score, and speech intelligibility. Teacher expectations were also related to the student's reading comprehension, IQ score, and speech intelligibility, as well as type of enrollment (residential or day), and age of the student. Walker concluded that the formation of teacher expectations is the function of the interaction that occurred between teachers and students in each school setting.

As recognition of the need for appropriate career goal-setting has increased for deaf youth during the past decade, researchers increasingly have investigated those variables having the greatest impact on the deaf adolescent – those associated with parents and teachers. As yet, there is still a dearth of research in this area, and even less agreement in the available literature as to the variables (parents, school, peers, or the deaf subculture) that may have the most influence on the deaf youth's career goals.

Recent Approaches and Model Programs

The United States Office of Career Education was established in the early 1970s. At about the same time, the Model Secondary School for the Deaf (MSSD) was established at Gallaudet College. Under the direction of several key staff members at MSSD, various avenues were explored to develop a comprehensive career education program for the adolescents attending that institution. Several approaches to career education were investigated, including the CREED (Cooperative Research Endeavors in the Education of the Deaf) program (Munson, 1979) and Ohio State University's Comprehensive Career Education Model (CCEM). Due to its generalizability to a broad spectrum of career endeavors, the CCEM was selected as the model for MSSD (Galloway, 1979).

As reported in *Career Development for the Hearing Impaired* (Updegraff, Steffan, Bishop, & Egelston-Dodd, 1979), the Model Secondary School for the Deaf and the National Technical Institute for the Deaf joined forces in 1978 to plan and present two national working conferences for the deaf. The outcome of these conferences was the development of the National Project on Career Education (NPCE), a career education training and dissemination network that reaches out to schools and programs for deaf youth throughout the United States. The ultimate goal of the NPCE is that all deaf children receive career education, not merely vocational education, so that they may make informed decisions about their career futures.

Moores (1978) discussed findings from an investigation of three federally funded demonstration programs. Although the occupational status of young deaf adults increased during the ten-year period (1964–1974), they did not make any major entries into new occupations. Deaf adults chose careers along traditional sex lines (i.e., females chose clerical positions while males chose skilled or semiskilled trades). Communication and underemployment continued to be areas of concern for deaf adults in the world of work. It was shown that the advent in the late 1960s of post-secondary programs specifically geared to the deaf was beneficial, but that poor education in the early years still hampered the employability of deaf persons.

The Current Job Market and Employment Prospects

Social consciousness may be waning somewhat as the government strives to reduce inflation. The Education of the Handicapped Act as amended had been proposed for in-

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clusion in the Education Block Grant, but Congress maintained it as a categorical program. The Career Education Incentive Act was not so fortunate; it was repealed effective October 1, 1982.

It was noted in the *U.S. Industrial Outlook, 1977 (with Projections to 1985)*, that the civilian labor force is projected to rise from an estimated 94.9 million in 1976 to 108.6 million in 1985. With the present high rate of unemployment, it is clear that deaf persons must be armed with well-developed skills and abilities if they expect to enter this job market. Career education is as necessary today as it was ten years ago. It must continue to be a focus of all educational programs serving deaf children and youth. The deaf person who from an early age has a strong foundation in career education, will be best prepared to face the computer age.

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The National Project on Career Education: Past, Present, and Future

David R. Updegraff
Judy Egelston-Dodd

History of NPCE

In the fall of 1978, two institutions embarked upon an exciting new cooperative venture: a co-funded and co-managed project to enhance career education programs in schools serving deaf children. The Model Secondary School for the Deaf at Gallaudet College, Washington, D.C., and the National Technical Institute for the Deaf at Rochester Institute of Technology, Rochester, New York, jointly established the National Project on Career Education (NPCE) in direct response to needs expressed by professionals working in this area.

Educators of hearing-impaired children have long recognized the necessity for structured career development programming in the curricula offered to their students. Career development is vital for human maturation and intellectual development. Research on self-esteem and self-concept of deaf children (Meadow, 1967) has suggested that children who have a positive self-concept tend to achieve more. In the career education of deaf learners we should keep in perspective the disability caused by hearing impairment and highlight the identification and development of each students' individual attributes and skills. In the years prior to 1965, career education often was limited to specific vocational training in the state residential schools for the deaf. Once students graduated from such a program, they often had received specific skill training in a field and were then expected to enter the job market.

Although this was certainly of great benefit to countless deaf persons, it was limiting in the following ways:

1. The occupations for which students were trained were often determined by sex, availability of specialized equipment in the schools, or by other factors.
2. Students were often "tracked" as academic or vocational from a relatively early age and, once tracked thusly, it was difficult to change tracks as a student's interests and talents matured.
3. Little attention was paid to labor market trends in students' communities for the purpose of shifting the offerings in a particular school's curriculum.
4. Little attention was paid to supplemental programs related to students' career development. Life skills such as using a checkbook, completing job application forms, learning to drive, doing consumer math, and other critical components of a successful career development program were overlooked.

The listing of limitations is by no means intended as a castigation of the leaders of programs for the deaf at the time; the same list of limitations can be applied to public education for hearing children as well. Further, programs for the deaf were in the forefront of efforts to correct such limitations and to provide more well-rounded career development opportunities for their students.

An additional problem was that the broader society of the times (e.g., prior to 1965) was far less accepting of handicapped workers. Deaf persons did not have the protection against discrimination currently offered by Sections 503 and 504 of the Rehabilitation Act of 1973; there were few interpreters outside the major metropolitan areas or away from the schools for the deaf, except for hearing family members. There were also innumerable barriers to successful career development. Such barriers persist to the present; they include attitudinal, architectural, and communication barriers, in addition to more insidious barriers such as job descriptions with unnecessarily restrictive requirements. Legal remedies often are time-consuming, expensive, and may not be generally known to individual handicapped persons. Thus, other interventions must also be utilized.

The need for materials and strategies for a career education effort that counteracts sexism, handicapping conditions, and other discriminatory societal influences has been documented by Stolte (1977). Deaf workers, particularly females, are not readily available as role models. Schooling for the deaf, even through the secondary level, still emphasizes language development, often to the near exclusion of other content areas. The business community views with pessimism the difficulty, inconvenience, and expense of communicating through an interpreter, learning manual communication, and installing telecommunication equipment to assist potential deaf employees. The presumed infeasibility and risk of a hearing-impaired person working with technical equipment has been cited as the rationale for the low participation of the deaf in careers in science and technology. Although these barriers are not yet completely down, they are being breached more successfully now than ever before.

The National Project on Career Education provides educators of the deaf with intervention strategies to break down stereotypes and other barriers to career development. In response to numerous requests from residential schools and programs for the deaf regarding the implementation of career education, the Model Secondary School for the Deaf (MSSD) and the National Technical Institute for the Deaf (NTID) assembled administrators, teachers, and career education coordinators from several eastern schools for the deaf in late 1977. At this planning

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meeting, five major areas of need in career education of the deaf were identified.

1. The definition of career education for hearing-impaired individuals needed to be clarified, particularly as it related to vocational education.
2. Awareness of career education and its relevance for the hearing impaired needed to be heighte..ed.
3. What we have learned about implementing career education needed to be shared.
4. The most urgent areas for career development of hearing-impaired students needed to be identified.
5. The most urgent areas for career development of hearing-impaired students needed to be prioritized.

As a result of this meeting, two National Working Conferences on Career Development for the Hearing Impaired were conducted. The first, sponsored by MSSD, was held in Washington, D.C., in February 1978. The second conference, sponsored by NTID, was held in Rochester, New York, in September 1978. A total of 200 experienced career education specialists from 34 residential schools and day programs participated in the two conferences.

The five areas of need identified by administrators and career education coordinators of programs for the

Table 1

Issues in Career Education for Hearing-Impaired Students

Issue	Ratings of Importance			
	Average Rating	Teachers	Administrators	Counselors
A better definition of career education is needed.	2.3	2.1	2.5	2.2
The public should be educated about the employability of deaf people.	4.1	4.6	4.0	3.8
Appropriate career education materials must be developed.	3.8	3.5	4.3	3.6
A proper balance should be established between career education and the remaining curricula.	3.1	3.3	3.1	3.0
The volume and availability of employment outlook studies should increase.	2.5	2.3	2.4	2.8
Career education should continue after graduation.	3.4	3.4	3.3	3.4
Parents and families need to be more involved in the career education process.	4.1	4.4	3.5	4.4
Career education should include information on personal, social, and job adjustment.	4.9	5.0	5.0	4.7
Successful program models and materials should be disseminated.	3.7	3.9	4.3	3.0
There is a lack of funding for career education programs.	3.3	3.3	3.3	3.2
School staff should receive inservice training.	4.4	4.2	4.7	4.3
People and resources in the community can contribute to the career education program.	4.0	4.1	4.1	3.8
There needs to be greater visibility of good deaf role models.	3.6	3.7	3.2	3.9
Administrators must make a stronger commitment to career education programs.	4.0	3.7	4.1	4.3
Work/experience (co-op) programs should be expanded.	3.7	3.7	3.7	3.6

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Table 1 (continued)

Issue	Ratings of Importance			
	Average Rating	Teachers	Administrators	Counselors
Career education can be infused into regular classroom and dorm activities.	4.1	4.2	4.2	3.9
Teacher preparation programs should include career education in their curricula.	3.9	3.8	4.2	3.7
Career education should begin earlier in the educational process and should continue throughout schooling.	4.3	4.8	4.0	4.1
There is a need for a clearinghouse for career education materials for the deaf.	3.5	3.3	4.3	2.8
Job placement and counseling services must be provided after graduation.	3.8	3.9	3.7	3.7
The success of career education programs should be evaluated.	3.6	3.5	3.7	3.6
There is a need for better career guidance and counseling.	3.8	3.6	4.2	3.7
Better coordination is needed between secondary and elementary school career education programs.	3.4	3.7	3.0	3.5
A comprehensive plan for implementing career education goals must be developed.	4.2	3.9	4.5	4.2
Vocational rehabilitation agencies should improve their coordination with school programs.	3.7	3.8	3.7	3.6
Deaf students must develop the appropriate communication skills to increase their employability and functioning in the community.	3.2	1.8	4.6	3.1

Note. These data are based on a 5-point scale, with 5 being of critical importance and 1 being of no importance.

deaf were recast in the form of goals for the two national working conferences. These goals were (a) to clarify concepts related to career education of the hearing impaired; (b) to increase awareness of career education and its relevance for the hearing impaired; (c) to facilitate the sharing of information which has been learned by schools and programs implementing career education (i.e., what has worked, what has not worked); (d) to identify the issues most urgently needing attention to make career education a reality for hearing-impaired children; and (e) to develop strategies to address the most urgent issues identified in goal (d).

Prior to the working conferences, participants were sent a packet of reading materials[1] and a list of potential issues generated by the planning committee. At the two conferences, a structured face-to-face decision-making technique, called a modified-Delphi technique (Updegraff, Steffan, Bishop, & Egelston-Dodd, 1979), was used to augment the previously identified list of issues. The technique was also used to prioritize the final list of issues in terms of importance to career education of deaf students and in terms of the urgency of implementation of solutions to each issue.

Table 1 (adapted from Updegraff et al., pp. 101–102) presents the list of 26 issues. The urgency and importance ratings of the top 11 issues

1. The readings were selected from the writings of Dr. Kenneth B. Hoyt, Director of the U.S. Office of Career Education, and may be found in the list of references.

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"The greatest discrepancy occurred in Issue 7—involvement of parents...."

are depicted in Table 2 (adapted from Updegraff et al., p. 110). These ratings were derived from the votes of three groups—teachers, counselors, and administrators – utilizing the modified-Delphi technique mentioned earlier. It should be noted that the ratings of importance in Table 2 were combined for both conferences, inasmuch as there were no significant differences between them.

As can be seen in Table 2, two issues captured the attention of the participants in both working conferences as being most urgent and most important: the issue of inservice training for staff, and the issue of comprehensive planning for the implementation of career education goals.

The rating discrepancies between the first and second conferences on the urgency of issues are of interest. The greatest discrepancy occurred in Issue 7—involvement of parents and families in career education programming for hearing-impaired children. This may be attributed to the fact that the participants in the second working conference included many representatives from day programs, while those in the first conference included only residential school representatives. Since residential students' families often live several hours drive from the school, interaction with family members may be limited.

Although several other issues re-

Table 2

Rank Order of Urgency and Average Ratings of Importance for Top Ten Issues Related to Implementing Career Education

Issue	Urgency			
	Combined	First Conference	Second Conference	Average Rating of Importance
School staff should receive inservice training.	1	2	1	4.5
A comprehensive plan for implementing career education goals must be developed.	2	1	3	4.3
Career education should include information on personal, social, and job adjustment.	3	6	2	4.4
Appropriate career education materials must be developed.	4	4	6.5	3.9
Career education can be infused into regular classroom and dorm activities.	5	3	8.5	4.2
Career education should begin earlier in the educational process and should continue throughout schooling.	6	8	5	4.3
Administrators must make a stronger commitment to career education programs.	7	5	9.5	4.0
Parents and families need to be more involved in the career education process.	8	11.5	4	4.1
Successful program models and materials should be disseminated.	9	10	9.5	3.7
The public should be educated about the employability of deaf people.	10	8	13.5	4.3
People and resources in the community can contribute to the career education program.	10	8	13.5	4.1

Note. These data are based on a 5-point scale, with 5 being of critical importance and 1 being of no importance. The data were pooled and averaged for both conferences combined.

"It was decided...to employ the concept of the ripple effect...."

ceived discrepant ratings in the two conferences, hypotheses for these are less easily generated because the data were not collected in a manner permitting further interpretation.

Following the first conference, administrators from NTID and MSSD decided to formalize the working relationship thus far established by organizing and funding the National Project on Career Education (NPCE). The NPCE was specifically designed to generate and provide solutions to the needs identified in the first conference and reaffirmed at the second conference. Its purpose was to focus on inservice training in career education (CE) for educators working with primary, elementary, and secondary level hearing-impaired students. The long range goal for the NPCE is as follows:

> Each state will have a model CE program and a cadre of CE facilitators who can assist the personnel in other schools serving hearing-impaired students to (a) develop and implement plans for a comprehensive K–12 CE program, and (b) infuse CE concepts into the school curriculum.

It was not possible—financially or in other ways—for the NPCE to serve the entire country directly in terms of all inservice training needs. It was decided, therefore, to employ the concept of the *ripple effect* through providing direct training to at least one career education team in each state, which would in turn provide training to local schools and programs in that state. Schools with successful career education programs already developed and in place were expected to offer workshops within their school and to local schools in the state within two years. Schools with career education programs under development were allowed more than two years, if necessary.

The NPCE examined various strategies to assist programs in meeting the needs identified and finally settled on the approach used in the workshop, "Career Education and Planning Skills," which addresses two specific areas: (a) career education content, in terms of concept development, values clarification, infusion techniques, and related topics; and (b) planning skills, in terms of the processes, content, and evaluation of a career education program.

The intensive training stage consists of an 18-hour, 22-module experiential workshop on career education and planning skills. Four hours of the workshop are scheduled as parallel sessions for administrators, teachers, and counselors. The workshop was pilot tested in the fall of 1978; it was revised and conducted at four regional sites in the fall of 1979 (New York, Washington, D.C., Missouri, and California) and at four other regional sites in the fall of 1980 (Minnesota, Oregon, Texas, and Florida). Career education teams from a total of 60 schools and programs have received direct inservice training from the NPCE National Training Team plus all the materials and manuals needed to replicate the "Career Education and Planning Skills" workshop (1980).

The intensive training in career education, planning skills, and delivery skills was given in the first four sites with successively greater success, as measured by participants' attitudes. Significant learning oc-

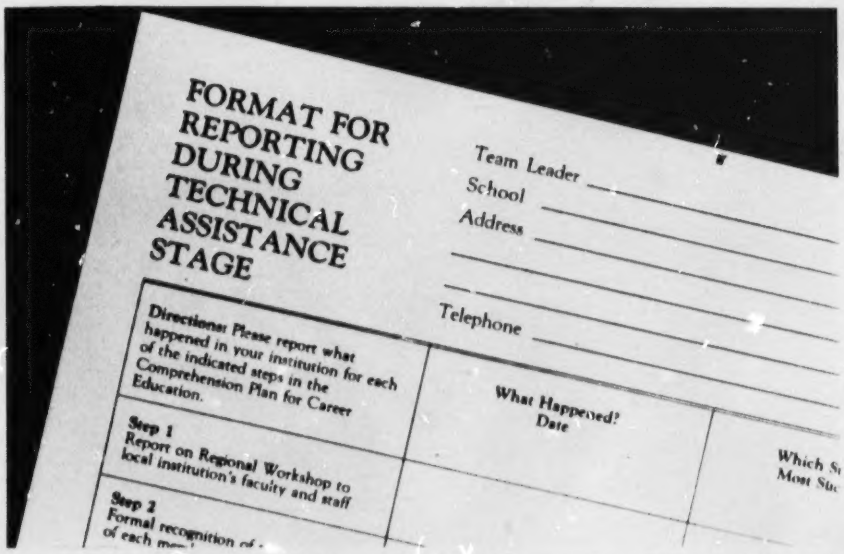
"The choice of initial strategies for implementation resulted in a 70% match...."

curred in three of the four sites, and the amount learned was comparable across the four iterations when entering knowledge was controlled. The workshop was well supported by the host institutions, the trainers, and their sponsoring institutions so that the resources and the delivery system were determined to be adequate for the effort.

Revisions in the *Trainer's Manual* and the final media package were used in a trial ripple (replication) workshop April 16–18, 1980, at the Arizona School for the Deaf and Blind conducted by the team from the California School for the Deaf in Berkeley (now located in Fremont). The replication of the model workshop content on "Career Education and Planning Skills" was judged successful with attitude and achievement data comparable to the best of the regional workshops. Delivery skills were covered only in the regional workshops for CE facilitators, and were, therefore, not presented at the ripple workshop in Arizona.

Current NPCE Effort

Since the regional workshops were held, follow-up technical assistance for participating schools has been delivered as needed. The technical assistance stage consists of a planning and reporting system within the network of schools represented at each workshop and training materials for further development of CE skills and implementation of CE programs. Data collection in this second stage may last from six months to two years, depending upon the unique needs of each participant program. The technical assistance process was used with the pilot participants from November 1978 through May 1979 and was evaluated formatively across the 29


FORMAT FOR REPORTING DURING TECHNICAL ASSISTANCE STAGE

Team Leader
School
Address
Telephone

Directions: Please report what happened in your institution for each of the indicated steps in the Comprehension Plan for Career Education.

What Happened? Date

Which St... Most Su...

Step 1
Report on Regional Workshop to local institution's faculty and staff

Step 2
Formal recognition of ... of each ...

programs which participated in the four regional workshops in the fall of 1979. Further technical assistance to the 31 programs which received the training in the fall of 1980 has begun.

The technical assistance results revealed a variety of levels of achievement, depending on the skills and experience of the respective teams. The skills related to effective teamwork were good to excellent across the first four audiences. The choice of initial strategies for implementation resulted in a 70% match with highly successful strategies reported in the educational research literature. The ability of the teams to serve as trainers in their schools and for other local programs is still being evaluated as implementation continues; however, initial results are good. About 90% of the participant schools have begun a formal planning effort for change. These changes include curriculum development to accomplish the infusion of career education objectives, establishment of a community advisory committee, student involvement in out-of-school activities related to work, inservice training, and grant proposal writing to support some of these efforts. Standard measures of factors which influence change are also planned for use during the technical assistance stage.

The NPCE workshop evaluation and technical assistance follow-up have progressed to the point where some specific conclusions and revisions may be made.

Additional ripple workshops were held in the Maryland School for the Deaf and in Los Angeles County, California in the spring of 1981. The concerns related to replicability and flexibility were overwhelmingly resolved with the recent success of these programs.

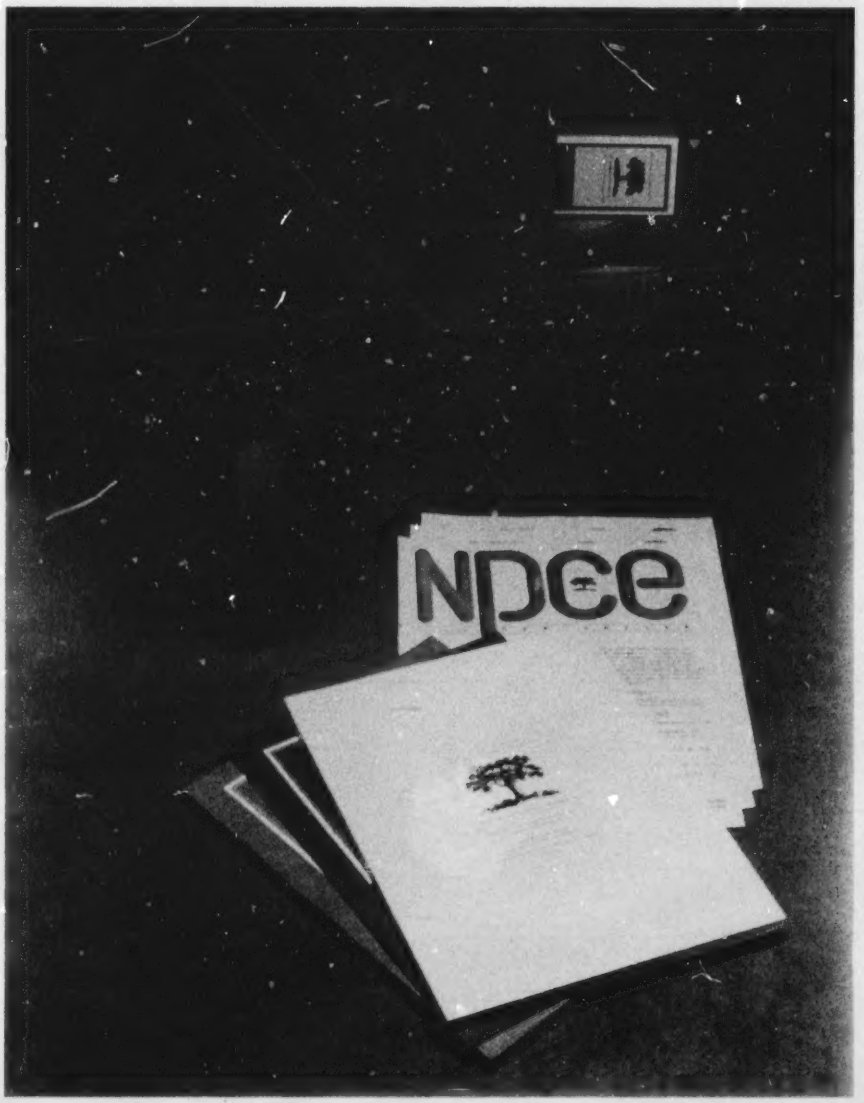
On-site consulting has been provided to participant schools upon request. A formal request form and follow-up report form have been developed and used to assist project planners in assigning priority in the event of multiple requests. These forms are also used for investigating the factors which tend to be associated with successful programs. Generally, facilitator teams are en-

"Up to now, the choice of consultants has depended upon the requesting school's need...."

couraged to apply for on-site assistance from NPCE when they have too large an audience for the team to handle alone, such as a schoolwide workshop, or an inservice program on the state level. Technical assistance (TA) consultants have been used for both training and planning roles, with the project supporting the travel expense. Up to now, the choice of consultants has depended upon the requesting school's need and the interest and availability of one of the original NPCE national trainers. As the facilitator teams in participant schools become more experienced with the training program and knowledgeable about the training materials, it will eventually be more appropriate to match their talents to the needs of the other schools in the network. The formation of a *trainer talent bank*, which could be tapped when less experienced programs need assistance, would be a potential result of the networking effort. The publication of *Catalyst: Handbook of Existing CE Programs and Facilitators* will enable schools to select their own consultants.

In order to identify the factors involved in successful community collaboration, a survey was sent out to schools that have established community CE advisory committees. A videotape entitled, "Community Advisory Committee Videotape," was used in the regional workshops to simulate a conflict-filled meeting with many communication barriers in evidence. The tape shows the skillful management of the conflict by a school superintendent. This videotape also illustrates many aspects of collaboration, including the composition of the committee, the role and function of each member, the role of the chairperson, how to facilitate each member's effectiveness, how to keep the interest and motivation of members whose function will be needed in the future, and how students can benefit from collaboration. To achieve the maximum benefit from this TA component, accompanying print materials will need to be designed with these other objectives in mind.

These TA efforts will all contribute to the readiness of a facilitator school to provide assistance to local programs. With a strengthened, documented, comprehensive plan, the career education program will provide a training mission for the NPCE schools. They may not have the world "beating a path to their door," but they should be looked to by less experienced programs as hav-



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"The most typical and vigorous effort following the regional training has been focused on infusion of CE into academic subjects."

ing some answers and solutions to the needs of deaf students and their career development.

The Outlook for the Future

A continuation of the workshop follow-up program has been planned, as needed by participant teams. In particular, evidence of changes and readiness to serve as a model facilitator program will continue to be sought.

Validation of Facilitators

NPCE will certify the readiness of the participant teams to ensure local schools of assistance in gaining awareness of career education, access to exemplary programs, and expertise in providing inservice training for their staff.

A system for monitoring improvement in student career outcomes has been established by the Conference for Educational Administrators Serving the Deaf (CEASD) using data on program graduates. The career outcomes (placement, salary, promotion, and other data) for graduates over a twenty-year period will be systematically reviewed. By tapping this existing mechanism, NPCE planners will avoid the onerous and, likely, invalid administration of standardized achievement tests to students in participant schools. The examination of career outcomes, while requiring a longer span of time, will nevertheless provide the most valid test of NPCE's impact; i.e., change at the student level.

A review of each school's academic curriculum using a self-evaluation checklist to rate the extent of career education (CE) infusion will validate the impact of NPCE on curriculum. The most typical and vigorous effort following the regional training has been focused on infusion of CE into academic subjects. The need for guidelines and explicit examples and nonexamples of infused activities led to the development of the *Handbook on Infusion: Strategies for Developing and Evaluating Career Education in an Academic Curriculum.* This TA component will be useful for developing self-confidence and skill in recognizing infused activities and in designing classroom strategies that result in academic outcomes that are relevant to the world of work. As materials are developed and used successfully, NPCE will disseminate abstracts to other users.

The training skills of the NPCE facilitators in the participant schools must be adequate to enable them to train staff in their home school as well as educators in local schools within their state. The need for an evaluation instrument to measure a trainer's effectiveness in delivering con-

Roadmap of Content and Modules

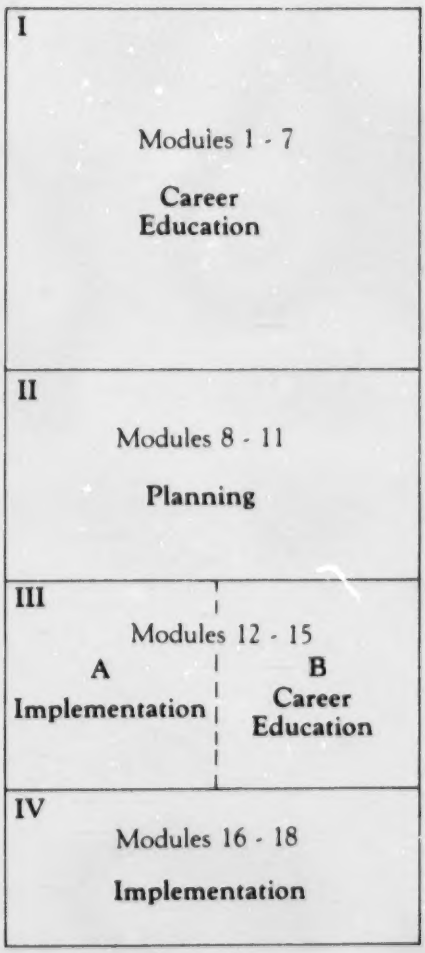
I. These modules provide administrators, teachers and counselors with basic career education background. New concepts include stereotyping, infusion of the CCEM model and collaboration with community programs.

II. These modules provide administrators, teachers and counselors with basic planning background. Appreciation for a systematic approach and a common language for the planning process should result.

IIIA. Administrators will be exposed to the NPCE implementation process and learn how to lead a group to consensus.

IIIB. Teachers/Counselors will receive indepth practice in curriculum infusion of the elements of the CCEM.

IV. All team members will prepare an implementation plan for their most urgent goals.



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"The greatest need expressed by participants... has been for curriculum and materials designed for infused strategies."

tent led to the development of "Training Skills: A Self-Rating Scale." This manual defines the categories of behavior being evaluated and explains how to apply the rating instrument. It includes examples and nonexamples of appropriate delivery behavior, and a scenario of the context of the training so that the user knows what to expect in a successful workshop.

Other Needs

Beyond the planning and training needs of the schools and programs serving the deaf are the other needs identified and prioritized by the national working conference participants in 1978. Such issues as personal and social skills, involvement of parents and families in the CE process, and funding sources for program development will deserve the same concerted effort and intensity with which the training and planning needs were addressed. The network is in place; the momentum and credibility have been established. Not to exploit it would be a waste.

In addition, most replication workshops in local schools and programs involve educators with experience in areas of special education other than deafness. This mixed audience of special educators represents a population for which the packaged training program was not designed nor evaluated. Evaluation data will be compiled when the opportunities present themselves to see if revisions should be made in order to accommodate educators of other handicapped populations.

Another unique audience is that of pre-service teachers and their college instructors. Much of the content of the workshop is compatible with the teacher education curricula found in degree- or certification-granting institutions. The catch-up game of in-service training would be unnecessary if the pre-service programs found a place for the NPCE content in their curricula. Both Gallaudet College and NTID, which cooperates with the University of Rochester, will be used to test the applicability of the content to pre-service instruction for majors in the education of the deaf.

The greatest need expressed by participants in both the regional and state inservice programs has been for curriculum and materials designed for infused strategies. The decision regarding how best to respond to this need will be made following a systematic needs assessment.

The future of the NPCE will depend on past and present accomplishments. As a national program, it must focus on the availability and quality of assistance in career education and planning in each state. Current reports indicate that our initial goals have been partially reached. At this point, the two co-supporting institutions must decide whether to continue to build on the established momentum and credibility of the NPCE to ensure long-range improvements in the career education programs to which deaf students are exposed in grades K–12.

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The Day School Program at Selaco-Downey High School

Carolyn Rowland

Selaco-Downey High School serves deaf and hard of hearing pupils from 17 school districts in Southeast Los Angeles County under the auspices of the Office of the Los Angeles County Superintendent of Schools. Selaco has a school cooperative program agreement with the California State Department of Rehabilitation. School personnel and rehabilitation staff work very closely in developing programs related to career education. Although Selaco has operated a work experience program for the last ten years, we were finding students were entering work experience without the necessary social/emotional prerequisite skills. School and rehabilitation personnel met to develop a program to meet the needs students were lacking. The result of their meeting was the development of a four-phase model program. Both agencies shared the funding responsibilities for the model.

Statement of the Problem

In our program evaluation, the factors listed below were identified as contributing to the lack of skill development.

1. There was a lack of infusion of career education in all subject areas.
2. The rubella population appeared to have more social/emotional needs than the nonrubella population.
3. Students were unable to apply work-related classroom concepts to real life situations.
4. The program lacked an extensive work-evaluation component.
5. The program needed a structured work-adjustment component rather than using work experience to meet this need.
6. The students were apathetic.

A four-phase model program was developed to address these six problem areas.

Subjects

This career education model began during the first semester of the 1980–81 school year. Fourteen students in grades 10–12 were in phase I, and 2 seniors were in phase IV. During the second semester, there were 12 students in grades 10–12 in phase I, 8 students in phase II, 9 students in phase III, and 2 students in phase IV.

The program has one and one-half classroom teachers, one work evaluator, one work-adjustment specialist, one interpreter, one aide, two half-time work-experience teachers, and additional support from school and rehabilitation personnel, as needed.

The Program

The new model established an intense prevocational component for the Selaco program. Each phase of the program is clearly defined.

Phase I

Students are assigned full-time to an off-campus facility for a minimum of one semester to participate in a comprehensive work-evaluation and work-adjustment program. Students receive an in-depth work evaluation to measure interest and aptitudes. In conjunction with the evaluation, they participate in work adjustment, which focuses on basic development of social, vocational, and production skills related to the world of work. This work-evaluation and work-adjustment component is the first phase of the four-phase model. Students receive two hours of academic instruction permeated or infused with career education daily. Four hours per day students are in work evaluation/work adjustment. Students meet exit criteria established by the California State Department of Rehabilitation and school personnel before moving into phase II.

Phase II

Students are still assigned to the off-campus facility full time. They are given the opportunity to apply their newly acquired skills by moving into a closely supervised work-experience environment within the local industrial community. Students that are unable to appropriately apply these new skills can be pulled back into the off-campus facility for counseling or further work-adjustment training. Students in this phase receive academic instruction with career education four hours per day and work within the community two hours per day.

Funding for salaries in this phase is shared by the Department of Rehabilitation and the Office of the Los Angeles County Superintendent of Schools. When students have successfully demonstrated appropriate worker characteristics in a reality-based setting, they move back to the campus mainstreamed program and are prepared to enter phase III.

Phase III

Students are offered work experience in positions of increased responsibility with minimal support and supervision from school and rehabilitation personnel. These are usually after-school jobs. Developing vocational skills is the main focus in this phase of the program. Salaries in this phase are usually paid by employers. Transportation becomes the stu-

At the time this article was written, Carolyn Rowland was employed in the Los Angeles County School System.

dents' responsibility, although public transportation tickets are provided upon request.

Phase IV

This phase, while optional, offers students the opportunity for intense trade training at an adult education facility, off campus. Students receive two hours of infused academic instruction and four hours of trade training. This program allows students to become proficient in highly technical vocational fields. When students exit this program, they have acquired the vocational skills necessary to be competitively employed.

Students who have chosen not to participate in phases III and IV, or who have not acquired the skills necessary to enter competitive employment, have the opportunity to continue training after graduation with the support of the Department of Rehabilitation.

Summary and Discussion

Phases I and II of the four-phase model program are required of all students in the Selaco program. Phases III and IV are optional courses in the program. Based on scores from the Stanford Achievement Test: Hearing Impaired version, students who participated in the four-phase model showed academic growth that met or exceeded the scores of students who remained in the academic setting full time.

The physical environment of the off-campus program provides practical, reality-based experiences for students in the prevocational, vocational, and academic aspects of their education. More significantly, motivational, social, and emotional factors have markedly improved in those students who participated in the program, thereby better preparing them for the world of work.

Oregon's Regional Programs for the Deaf: A Statewide Career Exploration Project

Leon Fuhrman

As educators of the deaf take a realistic look at the challenge of preparing hearing-impaired students for employment, they are confronted with the basic law of supply and demand. Current economic conditions have created an excess supply of workers in many areas. Consequently, there is the urgent need for program administrators in the education of deaf students to evaluate traditional methods of vocational preparation. Educators need to be reminded to develop programs that are current with the needs of the business community so students can enter the job market with marketable skills. It is encouraging to see the leadership role taken by NTID and MSSD, through the National Project on Career Education, in stimulating the field to take a more pragmatic look at career education.

Cooperation vs. Collaboration

Upon examination of the past relationship between educational programs for deaf persons, state agencies, and business, it becomes clear that there is a growing need for collaboration, as opposed to cooperation. In the past, agencies have been asked to cooperate with the school's plan for career development. What is needed now is collaboration with business and other support services in the development of career education programs. Educators tend to lose touch with the occupational needs of the community and to adopt programs that reflect the educator's interpretation of those needs rather than the current demands of the business sector.

One example of the collaboration concept is the statewide career exploration project in Oregon funded through the Governor's grant of the Comprehensive Employment and Training Act (CETA).

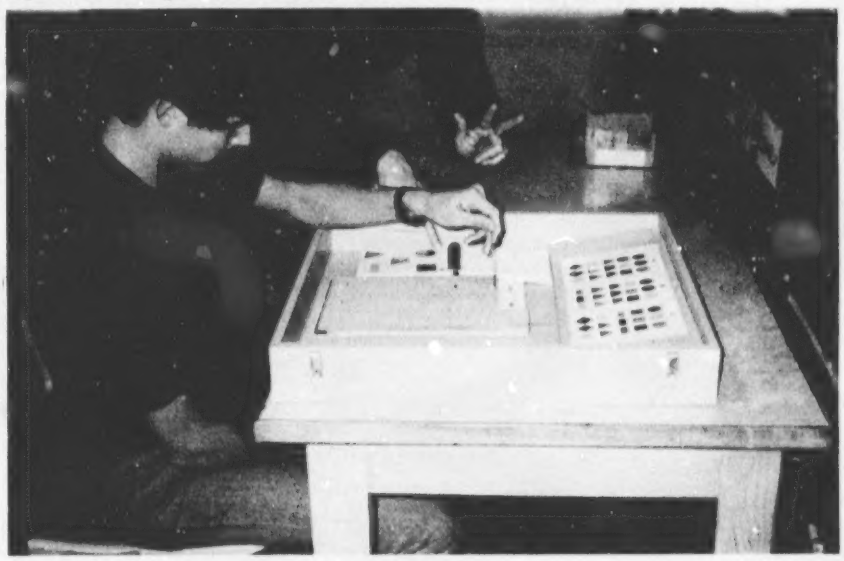
A Statewide Project

In a decision that proved to be visionary, Oregon's Youth Council for CETA recommended that funding be used to provide transition services for handicapped youth served by state agencies. These transition services were to include vocational assessment, job-search skills, counseling, and job sampling. Through the combined efforts of Oregon's state school for the deaf, Oregon's regional programs, and the Governor's grant analyst, a statewide project was developed to provide the much-needed exploration stage of career development in Oregon's career education programs for the deaf. The overall goal of the statewide project is to provide realistic career-exploration experiences during grades 7–10. These experiences later enable the students to choose a vocational program best suited to their individual interests and aptitudes.

Because of Oregon's unique structure of education for the deaf, this project could operate at the statewide level. Oregon's educational programs for the deaf are divided into four regional programs. Each region has a full-time position for the coordinator of career education.

A state advisory committee on education of the deaf monitors all education programs for the deaf in Oregon. The committee members are appointed by the state Superintendent of Instruction. This committee consists of parents, students, teachers of the deaf, representatives from teacher-training programs, the regional program directors, the president of the Oregon Association for the Deaf, and the program coordinator for Vocational Rehabilitation.

The function of the advisory committee is to make recommendations to the state Superintendent of Instruction. The committee is on record as being in support of a statewide cooperative effort to coordinate career development in the regional programs and unanimously supports the concept of a statewide CETA project as being consistent with the regional concept.

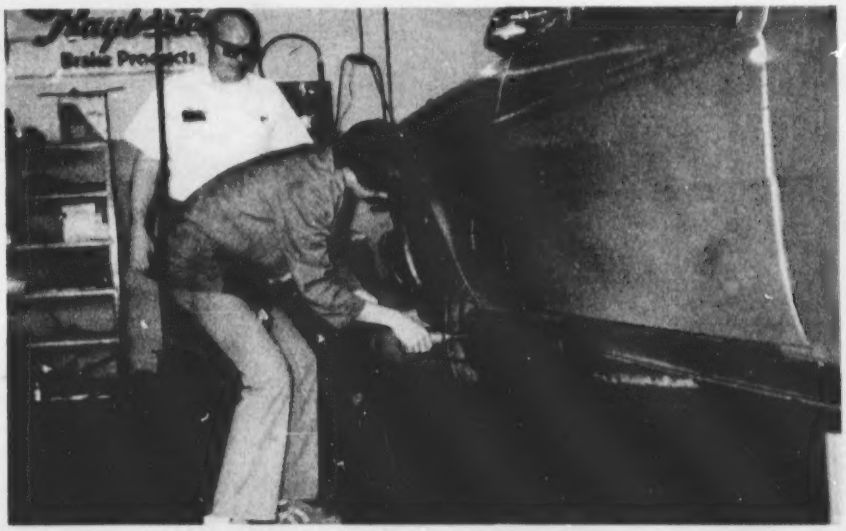


Project Implementation

Having obtained approval to serve students statewide, the career education coordinators from each region collaborated with local education agencies to develop a work plan of implementation. The project provided three phases of service: vocational assessment and counseling, job-search skills, and job sampling.

Project Phases

The first phase of the project involves vocational assessment. Dependence upon traditional vocational-evaluation systems, in the experience of the author, has proved to be a disservice to the student. However, if one combines information from a work sample series and an interest inventory with what is learned from observations and evaluations of the community co-op work experiences, a good career guidance program can be provided. The VALPAR Work Sample Series and the Wide Range Interest Opinion Test (WRIOT) are used to give hearing-impaired youth information to help them choose three occupational areas of interest to explore.



The second phase of the project focuses on job-search skills. This phase provides students the opportunity to develop appropriate job attitudes and behavior. Job applications, interviews, etc., are also covered.

The third, and most important, phase of the project is job sampling. The goal here is to provide up to three one-week job samples in three different occupational areas. This required the development of over 300 job sample sites for 237 students. Many job sites could be used for more than one cluster. For example, a hospital offered job samplings in clerical occupations, textiles, health occupations, and machine operation.

Multihandicapped Students

Of the 237 students in the project, 24 are multihandicapped. Many of the "rubella bulge" students are now in the career-exploration stage in their career development. It became apparent during the first project year that this group needed two more developmental steps between the classroom and community job sampling: (a) a classroom work-training center to teach job tasks from occupations in the community, and (b) on-campus job sampling to apply these tasks in a controlled environment. This program is now part of the statewide project; it serves two groups in the

"...the local programs that are cost effective and produce the best results will receive the available resources."

Portland region and one group at the Oregon State School for the Deaf in the Salem region.

Summary

Because of the successes enjoyed by collaborating with the business sector for this project, professionals from the Oregon regional programs are optimistic about the future. While professionals must not lose sight of the need for continuing to develop programs that will prepare hearing-impaired students to be producers in society, they will need to be sensitive to the needs of business and industry to employ hearing-impaired persons successfully. If the community is asked to assist in the career development of hearing-impaired persons, it is only logical that business and industry be given the assistance they need to comply. As programs like CETA are cut back, the local programs that are cost effective and produce the best results will receive the available resources. The successful practitioner will be the one who strives to collaborate efficiently with the community and the other agencies that have the resources to serve hearing-impaired persons.

Two Determinants for Perceiving Parents As Influential in the Development of Occupational Goals for Deaf Students

Richard W. Meisegeier

A wealth of research findings have shown parents to be an important factor for the occupational aspirations of their hearing offspring.[1] But, to what extent do deaf college students perceive their parents as sources of influence for their occupational aspirations? And, what are some of the factors that determine whether or not parents are perceived as being influential?

Though rarely stated explicitly in the research literature on deafness, parents, teachers, counselors, administrators, and the deaf students themselves frequently disagree as to whether or not parents are important influences on their deaf children when the following are considered:

1. Nine out of ten deaf children in the United States are born to hearing parents (Rainer et al., 1963; Rawlings, 1973; Schein & Delk, 1974).
2. Seventy-eight percent of the deaf children in the United States were born deaf (Rawlings, 1973).
3. Although the majority of deaf adults use signs, in only 12% of the hearing families with a deaf child does anyone other than the child learn to use manual communication (Rainer et al., 1963).
4. Nearly 33% of the deaf children in the United States are educated in residential schools and so are separated from their parents for most of their school years (*American Annals of the Deaf*, 1980, p. 179, computed from the table).

Background

A number of the studies that have shown parents to be an important factor for the occupational aspirations of their hearing offspring have used the theoretical model of reference groups as their basic orientation. The central concept of this theory may be defined as follows:

> A reference group is a group, collectivity, or person which the actor takes into account in some manner in the course of selecting a behavior from among a set of alternatives, or in making a judgment about a problematic issue. A reference group helps to orient the actor in a certain course, whether of action or attitude. (Kemper, 1968, p. 32)

Shibutani (1955) has referred to a reference group as one whose perspectives constitute the frame of reference of the actor. Thus, if we follow the reasoning of Kemper and Shibutani, we can view parents as a source of reference who provide perspectives from which offspring develop occupational aspirations.

Two factors would seem to be important in this process. The first of these is communication. As Shibutani reminds us, Dewey long ago emphasized that "society exists in and through communication; common perspective—common cultures—emerge through participation in common communication channels. It is through social participation that perspectives shared in a group are internalized" (p. 564).

With the emergence of verbal language, the child with normal hearing begins to communicate with others in society. In this process of communicating, those who George Herbert Mead (1934) would call "the other," and those subsequently called "significant others" by Sullivan (1940), exert their influence on the formation of values, norms, and goals.

For the deaf child, this process may be complicated because of the circumstances which surround deafness. When deafness occurs at birth or during early infancy, it effectively precludes the spontaneous acquisition of verbal language (Furth, 1973, p. 7). The perception of parents as a source of influence may be affected by the deaf child's inability to communicate with them.

The second factor which would seem to be important in identifying others as reference group persons is *perceived similarity*. Herriott (1963) refers to this as "self-assessment" relative to others. He elaborates on this by saying, "in general, an individual will aspire to do that which he perceives others have done who are similar to himself in relevant ways. These others are his reference groups, and the bases of his perceived similarity to them constitutes dimensions of self-assessment" (p. 162).

The family has a special significance as a reference group for the occupational aspirations of children. "The family as the child's primary reference group tends to define his occupational universe by (a) furnishing work role models with which the child can identify and (b) by transmitting a set of values about work in general and types of work in particular" (Borow, 1966, p. 382; *see also* Slocum, 1974, p. 260f).

Again, for the deaf child, this process may be complicated because of the circumstances which surround deafness. For the child who attends a residential school, the parents' influence as work role models may be diminished. Also, the values about work in general and the types of work in particular which the parents attempt to transmit to their child may be truncated or misunderstood if the parent and child have difficulty communicating. Either situation may influence the extent to which the deaf child perceives his or her parents as being influential.

1. Bordua, 1960; Kahl, 1953; Sewell and Shah, 1968; Simpson, 1962; and Williams, 1972, are but a few of the studies cited in the literature.

Table 1

Demographic Characteristics of Sample by Sex

Sex	Parents' Hearing Status		Residential Status		Age at Onset		dB[a] Loss in Better Ear	
Males	Father		Residential	(*N*=105) 59.0%	At birth	75.0%	60 dB or more	44.1%
(*N*=178)	Hearing	(*N*=153) 86.0%	Nonresidential	(*N*=73) 41.0%	By or before		70 dB or more	35.6%
	Deaf	(*N*=23) 12.9%			age 3 years	89.0%	Don't know	45.2%
	NA	(*N*=2) 1.1%						
	Mother							
	Hearing	(*N*=152) 85.4%						
	Deaf	(*N*=26) 14.6%						
Females	Father		Residential	(*N*=101) 52.6%	At birth	77.3%	60 dB or more	47.1%
(*N*=192)	Hearing	(*N*=161) 83.9%	Nonresidential	(*N*=91) 47.4%	By or before		70 dB or more	41.8%
	Deaf	(*N*=30) 15.6%			age 3 years	92.4%	Don't know	46.6%
	NA	(*N*=1) 0.5%						
	Mother							
	Hearing	(*N*=166) 86.5%						
	Deaf	(*N*=26) 13.5%						

[a] dB = decibel, a unit for measuring the relative loudness of sounds.

Focus of the Study

The purpose of this study was two-fold: to answer the question of whether or not parents are perceived as influential in the development of the occupational goals of their deaf offspring; and to investigate whether or not ability to communicate with and perceived similarity to parents are important factors for determining whether or not parents will be perceived as influential.

Hypotheses

The basic hypothesis of this study was that deaf students would perceive their parents as being important influences on their occupational goals and aspirations if they were able to communicate with their parents and if they perceived themselves as being similar to their parents. It was further hypothesized that this would be true regardless of the mode of communication used, regardless of whether or not the student lived at home or resided at school, and regardless of whether or not the parents were deaf or hearing.

Procedures

The subjects for this study included the entire preparatory and freshman classes enrolled at Gallaudet College during the fall semester, 1977. The final group used in this study consisted of all those students who completed the questionnaire and met the following qualifications:

1. They were full-time students,
2. They were United States citizens,
3. They had completed their secondary schooling within the previous two years, and
4. They had never attended another postsecondary program (that is, they were not transfer students).

The resultant sample was comprised of 370 students. As Table 1 indicates, the sample was fairly evenly divided between males and females and between residential and nonresidential students. Although 90% of the deaf children in the United States are born to hearing parents (Schein & Delk, 1974), 12.9% of the males and 15.6% of the females in this sample reported having a deaf parent. At least 75% of the sample was born deaf and nearly 90% became deaf before the age of three years. Although over 45% did not know the decibel (dB) loss in their better ear, 35.6% of the males and 41.8% of the females reported a 70 dB loss or more.

Using the simultaneous method of communication, I administered the self-report questionnaire to all 370 respondents. The questionnaire had been designed to measure perceived degree of parental influence, perceived ability to communicate, per-

"...males who were able to communicate with their parents were more likely to perceive both fathers and mothers as being influential...."

ceived degree of similarity, mode of communication used with parents, hearing status of the parents, and residential status of the student.

Findings

The data were analyzed according to sex, first using multiple regression analysis and then by means of contingency tables using the Chi-square test. Tables 2–5 show the results of the multiple regression analysis. These tables reveal that, as predicted, both males and females perceived both their fathers and their mothers as being influential in the development of their occupational goals if they could communicate with their parents or if they perceived themselves as being similar to their parents. Also as predicted, the hearing status of the parents, the mode of communication used between student and parents, and the residential status of the student were not significant factors in perceiving parents as being influential. That is, if students were able to communicate with their parents or perceived themselves as similar to their parents, then parents were perceived as being influential regardless of (a) whether the parents were deaf or hearing, (b) whether the oral or "manual" mode of communication had been used, and (c) whether the student had been residential or nonresidential.

Analyzing the data by means of contingency tables using the Chi-square test, the data were analyzed separately for males and their fathers and mothers, and for females and their fathers and mothers.[2] As predicted, males who were able to communicate with their parents were more likely to perceive both fathers and mothers as being influential than males who were not able to communicate with their parents. The one exception to this was when the fathers were deaf. Deaf fathers were perceived as influential by males regardless of ability to communicate. This finding should be interpreted with caution, however, because of the small subgroup ($N=23$) and the fact that one cell was empty and one cell had only one case.

The data also showed that females who were able to communicate with their fathers were more likely to perceive their fathers as being influen-

2. Analyzing the data using two-by-two contingency tables and the Chi-square test resulted in a total of 56 tables.

Table 2

Multiple Regression Analysis for Males with Father As Dependent Variable

Dependent variable: perception of father as being influential

Independent Variables	Beta	*F* ratio
Residential status of student	−0.10540	0.190
Perceived similarity to father	0.12513	40.077*
Ability to communicate with father	0.10962	6.060*
Mode of communication used	0.07098	2.684
Hearing status of father	0.54680	1.486
(Constant)	0.03516	
$R^2=0.31997$		

* Significant at or beyond the .05 level.

Table 3

Multiple Regression Analysis for Males with Mother As Dependent Variable

Dependent variable: perception of mother as being influential

Independent Variables	Beta	*F* ratio
Residential status of student	0.09996	0.155
Perceived similarity to mother	0.11397	29.992*
Ability to communicate with mother	0.15609	7.353*
Mode of communication used	0.01063	0.047
Hearing status of mother	0.29281	0.502
(Constant)	0.42661	
$R^2=0.23417$		

* Significant at or beyond the .05 level.

"...deaf students who perceive themselves as being similar to their parents did perceive their parents as being influential...."

Table 4

Multiple Regression Analysis for Females with Father As Dependent Variable

Dependent variable: perception of father as being influential

Independent Variables	Beta	*F* ratio
Residential status of student	0.12326	0.245
Perceived similarity to father	0.11444	29.295*
Ability to communicate with father	0.14192	11.506*
Mode of communication used	−0.03898	0.859
Hearing status of father	−0.07812	0.035
(Constant)	0.64589	
R^2=0.28811		

* Significant at or beyond the .05 level.

Table 5

Multiple Regression Analysis for Females with Mother As Dependent Variable

Dependent variable: perception of mother as being influential

Independent Variables	Beta	*F* ratio
Residential status of student	0.07750	0.085
Perceived similarity to mother	0.07524	11.222*
Ability to communicate with mother	0.13273	4.026*
Mode of communication used	−0.02591	0.218
Hearing status of mother	0.04625	0.009
(Constant)	1.18780	
R^2=0.12683		

* Significant at or beyond the .05 level.

tial than females who were not able to communicate with their fathers. There was no difference, however, between females who were able to communicate with their mothers and females who were not able to communicate with their mothers and their perception of mothers as being influential. The data for females and their mothers indicated that whether daughters could or could not communicate with their mothers, as measured in this study, in general, mothers were not perceived to be influential. This was particularly true for mothers who were deaf.

Turning to perceived similarity and perception of being influential, the data showed that, as predicted, for both males and females and for both their fathers and their mothers, deaf students who perceive themselves as being similar to their parents did perceive their parents as being influential in the development of their occupational goals.

Two measures of association were applied to the data in this study: the contingency coefficient *C* and Kendalls' tau-*b*. Although these measures of association showed that the degree of association ranged from weak to moderate, for males there was a greater degree of association between perception of themselves as being similar to their parents (both father and mother) and perception of their parents as being influential, than there was between their ability to communicate with their parents and perceiving their parents as being influential.

For females, the data were more complex. In general, there was a greater degree of association between perception of themselves as being similar to their fathers and perception of fathers as being influential, than there was between their ability to communicate with fathers and their perception of fathers as influential. In only two situations was there a higher degree of association for communication. The first was when the control variable *mode of communication* was introduced. For the subsample using the manual mode, the degree of association ranked third in the overall twelve measures of association. The second such occurrence involved the subsample of nonresidential students, which ranked sixth in overall measures of association.

Only four relationships were found to be significant for females and their mothers; all four involved perceived similarity.

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"...the present study indicates that parents are indeed perceived as influential...."

Conclusion

Ability to communicate and the extent to which one perceives himself or herself as being similar to his or her parents have some importance for perceiving parents as being influential in the development of the occupational goals of deaf college students. This is especially true for the perception of father as being influential. While ability to communicate and perceived similarity were important factors in determining whether males would perceive their mothers as being influential, they were not important factors for females. For the most part, females did not perceive their mothers as being influential. When fathers were deaf or used the manual mode of communication, they were inclined to be perceived as being influential regardless of ability to communicate or perceived similarity.

In general, this study tends to support the research conducted with hearing students that found parents to be an important influence in the development of the occupational goals of their offspring. These findings tend to refute Myklebust et al. (1962), who contend that deaf youth find it difficult to acquire knowledge of occupations from their parents. At the same time, the findings tend to add support to Turechek's (1967) findings that parents of deaf high school boys have some influence on the occupational choice of their sons. Using both female and male college students, the present study indicated both sexes perceived their parents as being influential.

Turechek made no attempt to discover what factors determined whether or not parents would be perceived as being influential. Turning to reference group theory, the present study focused on two factors: ability to communicate and perceived similarity. Of the two, perceived similarity showed the stronger association for perceiving parents as influential for both males and females. This finding tends to agree with Herriott's contention that in general, others are perceived as being influential when one perceives oneself to be similar to them in relevant ways. Herriott referred to this perceived similarity as the basis of the individual's "self-assessment."

It should be noted, however, that the data show that even for those relationships found to be statistically significant, the strength of association was at best moderate. The multiple regression analysis also indicated that perceived similarity and ability to communicate actually explained little of the variance for either parent.

In short, the present study indicates that parents are indeed perceived as influential, but for additional factors than those examined. Further research is needed to identify those other factors which are instrumental in determining whether or not parents will be perceived as influential. One such factor may be parents as role models. Perceived similarity is related to the idea of role model, but the latter includes other aspects that need to be investigated from the perspective of the deaf student.

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The Relationship between Teacher Expectations and the Occupational Aspirations of Seniors in Selected Residential Schools for the Deaf

Bonnie L. Walker

Deaf workers in the United States are concentrated in disproportionately large numbers in blue collar or manual labor occupations. Their personal earnings, occupational status, and educational levels are substantially below that of the general population (Schein & Delk, 1974). Efforts to bring deaf workers into the mainstream by providing postsecondary technical and academic training opportunities, and by introducing career education in residential schools for the deaf have not yet been shown to have appreciably affected the occupational aspirations of deaf adolescents (Joiner, Erickson, & Crittenden, 1968; Phillips, 1973; Twyman & Ouellette, 1978). Despite the widespread recognition of the need to change the occupational orientation of deaf youth, the emphasis in most residential schools for the deaf continues to be on vocational preparation leading to unskilled and semiskilled occupations (Lacey, 1973).

The failure of educational programs to bring about a change in the aspirations and occupational preparation of deaf youth has led a number of writers to conclude that the problem may be related to the expectation levels of their teachers (Egelston-Dodd, 1977; Schein, 1977; Twyman & Ouellette, 1978). No empirical data, however, were available regarding the expectations that teachers have for their deaf students. Further, whether teachers' expectations are related to the occupational aspirations of their students was also unknown.

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Theoretical Framework

Symbolic interactionists such as Cooley (1902, revised, 1922) and Mead (1934) postulated that the "self" develops as a result of an individual's interactions with other people. The self-concept, including self-image and self-esteem, develops as the individual interprets the reactions of others and generalizes based on those interpretations. A number of recent social psychologists, such as Brookover and Gottlieb (1964), Gordon and Gergen (1968), and Manis and Meltzer (1978), have stressed the importance of interactions with specific people or groups of people with whom the individual has more intense or prolonged relationships. These people, called "significant others," usually are thought to include parents, close friends and associates, and teachers. Mead stressed the importance of the role that language plays in the process of "self" development because language is the primary mode by which people convey their reactions to others.

A number of psychologists and researchers interested in the deaf population have developed their hypotheses from symbolic interaction theory and have speculated that deafness restricts the development of a healthy, positive self-concept (Brill, 1960; Craig, 1965; Levine, 1960; Meadow, 1967; Myklebust, 1960; Schlesinger & Meadow, 1972; Sussman, 1973). Others have concluded that the deaf population exhibits a normal range of intelligence and personality characteristics and the same variability as the general population (Hershenson, 1974; Moores, 1978). Garrison, Tesch, and DeCaro (1978) found that deaf youth within a deaf social environment had quite positive self-concepts.

The link between vocational development and self-concept has been extensively investigated by Super (1957, 1963). Super has theorized that vocational preference is linked to an individual's self-concept and that an individual is expressing self-concept in his or her career choice.

A large body of empirical evidence exists which suggests that teachers, through their interactions with students, express either overtly or covertly their expectations for their students. These expectations influence the development of the student's self-concept as well as the student's achievement (Braun, 1976; Brophy & Good, 1974; Rosenthal & Jacobson, 1968).

The review of the literature included research related to the theories of symbolic interactionism, self-concept, vocational development, and teacher expectancy. This led to the development of the following assumptions upon which the study design was based.

1. An individual's self-concept develops as a result of the individual's interpretations of the interaction between him or herself and other people in the environment.
2. Certain people or groups of people with whom the individual has prolonged or intense interaction become "significant others." The interaction between the individual and the "significant other" is reflected in the individual's self-concept (both self-image and self-esteem).
3. Teachers, individually and as a group, are "significant others" in a person's environment.
4. A person's self-concept begins to develop in childhood and is translated into occupational terms during adolescence. An individual is expressing self-concept when stating an occupational preference.
5. In order to understand the behavior of an individual, the individual must be observed within

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the social group. The individual and the group are interrelated to the extent that they are both the cause and effect of each other's actions. Social order is the result of individuals within a group attempting to behave as the others predict they will behave.

Purpose of the Study

The purpose of the study was to investigate the relationship between teachers' expectations and the occupational aspirations of seniors in two residential schools for the deaf. The study was designed to answer six questions.

1. Does a relationship exist between teachers' expectations and their students' levels of occupational aspirations? Do relationships between schools differ?
2. Do differences exist between schools regarding levels of teachers' expectations? Do differences exist between schools regarding levels of students' aspirations?
3. Are students' levels of aspirations related to their reading comprehension, IQ scores, speech intelligibility, degree of hearing loss, age of onset of deafness, sex, age, or type of enrollment? Do students differ between schools on those characteristics? Are those characteristics related to teachers' expectations?
4. Are teachers' expectations related to their sex, hearing status, certification status, subject areas taught, number of years at the school, or number of years of experience? Do teachers in the two schools differ on those characteristics?
5. What portion of the variance among students' occupational aspirations can be explained by their teachers' expectations, reading comprehension, IQ scores, speech intelligibility, degree of hearing loss, sex, or type of enrollment? Do any of those characteristics make major contributions to the variance?
6. What portion of the variance among teachers' expectations for students' occupational levels can be explained by their students' aspirations, reading comprehension, IQ scores, speech intelligibility, degree of hearing loss, or sex? Do any of those characteristics contribute to the variance?

Design of the Study

Subjects

Secondary-level teachers and students expected to graduate in 1979 from two residential schools for the deaf constituted the population for the study.The schools were selected because of their large number of students expected to graduate and their accessibility to the researcher. The subjects consisted of the 60 teachers who volunteered to complete a questionnaire (30 from each school) and the 60 seniors who participated in the interviews (24 from School 1 and 36 from School 2).

Settings

School 1 was a state residential school for the deaf that housed a preschool through high school program. The campus included several traditionally designed buildings with self-contained classrooms. The curriculum for high school students stressed vocational education. In addition to courses in English, reading, mathematics, science, social studies, and speech therapy, students were required to spend two periods a day in vocational courses.

School 2 was a federally funded residential school that accepted high school students only. The school was open-space in design, with some self-contained classrooms. The curriculum was designed to match that of a regular public high school. In addition to academic subjects and communication, students were required to complete five career development courses, including career awareness, job-seeking skills, two planned work experiences, and career decision making. Both schools subscribed to the total communication philosophy.

Data Collection

The teacher questionnaire consisted of a list of all of the students at the school who were expected to graduate that year. Beside each student's name were five occupational categories: professional / managerial, clerical, technical/skilled, semi-skilled, and unskilled. Teachers were given general descriptions of the categories and examples of occupations. They were asked to identify the occupational group which they expected each student to enter after completing high school and any other postsecondary education or training. Teachers were instructed to rate only those students whom they knew. The teachers also provided information about themselves, which was used in the data analysis.

Students were individually interviewed through total communication by a person from each school. Students were asked to name the occupation they expected to have after completing high school and other postsecondary education or training programs. Other information about the students used in the data analysis was collected either during the interviews or from school records.

Data Analysis

A numerical value ranging from 1 to 5 was assigned to each occupational group. Values were rank-ordered so that the higher value represented an occupational group that had a higher socioeconomic status and required more education, training, and language or communication skills. A mean rating was calculated from all of the ratings given to an individual student by the teachers. The number of teachers evaluating each student ranged from 9 to 30 (mean = 18.43; standard deviation = 2.89). The calculated mean rating represented the *teacher expectations* for the student in the data analysis. The occupations named by the students during the interviews were assigned to one of the five occupational groups. The value assigned to the occupational group became the student's *occupational aspiration level* and was used in comparisons with the teachers' mean rating. The order of occupational groups and the assignment of occupations to groups was based on information from the *Duncan Socio-Economic Scale* (Reiss, 1961) and the *Occupational Outlook Handbook* (1978).

Eleven hypotheses were tested using a number of statistical procedures, including Chi-square, *t*-test, Pearson's product moment correlation technique, and multiple regression. The level of confidence required to reject the null hypotheses was established at $p < .05$.

Results

The findings of the study represent an analysis of the data obtained from 60 students and 60 teachers at 2 residential schools for the deaf in the spring of 1979. In each case the data were analyzed for the total group, as well as for the subjects in each school.

Teacher Expectations and Student Aspirations

Teacher expectations and student aspirations were compared using the Pearson product moment technique. The correlation coefficient for the combined samples ($N=60$) was .77. The coefficient for School 1 ($N=24$) was .84 and for School 2 ($N=36$) was .71. In each case the relationship was significant at the .001 level of confidence. The magnitude of the correlations between schools was compared using Fisher's Z transformation. The calculated z (1.20) was not significant.

The mean level of teacher expectations for School 1 ($N=24$) was 2.608; the mean for School 2 ($N=36$) was 3.071. The difference was tested for significance using the two-tailed *t*-test. The *t*-value (−1.65) did not reach the required level of confidence. The mean level of student aspirations for School 1 ($N=24$) was 2.916; the mean for School 2 ($N=36$) was 3.528. The *t*-value (−6.12) did not reach the required level of confidence. Although differences between groups were not statistically significant, the direction of the differences was the same in each case.

Between School Differences

Differences between student groups with respect to mean age, years at the school, degree of hearing loss in decibels, Wechsler's Intelligence Scale for Children—Revised IQ scores, and grade equivalent scores in reading comprehension from the Stanford Achievement Test—Hearing Impaired version were tested for significance using two-tailed *t*-tests. The difference between the mean number of teachers who rated students at each school was also compared. Significant differences were found for two variables: number of years at the school and number of teacher raters. Students at School 1 had attended the school for four years longer, on the average, than students at School 2. Students at School 1 had been rated by significantly more of their teachers than the students at School 2.

Differences between student groups with respect to sex, type of enrollment (residential or day), and speech intelligibility (good, fair, or poor) were compared using Chi-square analyses. No significant differences were observed. Age of onset was not used in the data analyses because only two of the subjects were known to have become deaf after the age of three; the students from both schools, therefore, were considered to be prelingually deaf.

Differences between teacher groups on the variables of sex, certification in deaf education (yes or no), years at the school and years of experience (3 levels), subject areas taught (academic or vocational/elective), and hearing status (hearing or deaf) were tested for significance using Chi-square analyses. Teachers at the two schools were statistically similar on each variable except certification status. Teachers at School 1 were more than twice as likely to be certified in deaf education.

Aspirations, Expectations, and Student Characteristics

A correlation matrix was developed comparing student aspirations with teacher expectations, students' sex, age, years at the school, type of enrollment, speech intelligibility ratings, degree of hearing loss in decibels, IQ scores, and grade equivalent scores in reading comprehension. Matrixes were developed for the combined samples and for each school. Fisher's Z transformation was used to test for significant differ-

"...higher levels of teacher expectation were significantly related to group membership."

ences between the magnitudes of correlations between schools.

Three variables other than teacher expectations were found to have a significant positive relationship with student aspirations: reading comprehension (.52), speech ratings (.40), and IQ scores (.48). Differences between the magnitudes of correlations associated with student aspirations were compared using *t*-tests. The magnitude of the correlation between aspirations and expectations was found to be significantly greater than the magnitudes of correlations between aspirations and reading comprehension, speech ratings, and IQ scores (see Table 1).

The number of years students had attended the schools was significantly correlated with aspirations within each school, but they occurred in opposite directions. At School 1, years at the school was positively associated with level of aspirations; at School 2 the relationship was in a negative direction. At School 1 a positive significant relationship was observed between greater levels of hearing loss and higher aspirations. At School 2 the opposite relationship was observed, but it was not statistically significant. At School 1 student aspirations and number of raters correlated significantly in a negative direction. Students who had been rated by fewer teachers had higher aspirations. No relationship between number of raters and aspirations was observed at School 2.

With respect to sex, age, and type of enrollment, the data analysis indicated that no relationship existed between those variables and levels of student aspirations for the total group or within each school.

The correlation matrixes were examined to determine if any of the students' characteristics were significantly related to teacher expectations. Fisher's *Z* transformation was used to test for significant differences between the magnitude of correlations between schools. Five significant relationships were observed for the total group. Teacher expectations were significantly correlated with age, type of enrollment, speech ratings, IQ scores, and reading comprehension. Teachers had higher expectations for younger students, residential students, and those with better speech, higher IQ scores, and higher grade equivalent scores in reading comprehension.

Years at the school was significantly related to teacher expectations within each school, but it occurred in opposite directions. Teachers at School 1 had higher expectations for students who had attended the school for a longer period of time. The opposite relationship was observed at School 2.

Neither sex of student nor degree of hearing loss was significantly related to teacher expectations either for the combined samples or within each school.

Teacher Characteristics and Expectations

Each teacher's mean level of expectations was calculated considering only the expectations of the teacher for the students he or she rated. The calculated value represented the teacher's level of individual expectations. A correlation matrix was developed comparing the teacher's expectations with sex, certification status, years of experience, years at the school, subject area taught, hearing status, number of students rated, and group membership. The results indicated that higher levels of teacher expectation were significantly related to group membership, sex, and number of students rated. Teachers with higher expectations tended to be members of School 2, to be female, and to have rated a larger number of students. Certification status, years at the school, years of experience, subject area taught, and hearing status were not found to be significantly related to teacher expectation levels.

Multivariate Analyses: Aspirations and Expectations

A multiple regression equation was developed with student aspirations as the dependent variable and eight student characteristics as independent variables. The independent variables were entered into the equation using stepwise regression in the order shown in Table 2. The purposes of the analyses were (a) to determine the portion of the total vari-

Table 1

Comparison of the Magnitudes of Correlations Associated with Student Aspirations

Correlated Variables	*r*	Difference	*t*-value
Aspirations and expectations with	.77		
Aspirations and reading comprehension ($N=60$)	.52	.25	4.43*
Aspirations and speech ratings ($N=58$)	.40	.37	4.26*
Aspirations and IQ scores ($N=37$)	.48	.29	3.08*

* $p < .001$

ance among student aspirations that could be predicted from the eight variables, and (b) to determine the portion that each variable contributed independently to the variance. Part correlations (the unique *r*) were calculated for each independent variable.

The analysis yielded a multiple *R* of .88, indicating that 77% of the variance could be predicted using the eight variables. Of the four variables which were significantly related in the zero-order correlations (IQ scores, reading comprehension, teacher expectations, and speech ratings) only teacher expectations explained a significant portion of the variance when the other variables were held constant.

Because the number of subjects had been greatly reduced (from 60 to 35) when the IQ scores were included in the multiple regression equation, a second equation was developed entering seven student characteristics and omitting IQ scores. The multiple *R* was reduced to .81 (R^2=.65). Teacher expectations continued to be the only independent variable which explained a significant portion of the variance when other variables were held constant.

Regression equations were developed for each school both including and omitting IQ scores as independent variables. Results indicated that a significant portion of the variance among student aspirations within each school could be predicted with or without the inclusion of IQ scores in the equation. In each case teacher expectations was the only independent variable that explained a significant portion of the variance when other variables were held constant.

Table 2

Multivariate Analysis of the Relationship between Student Aspirations and Eight Student Characteristics (*N*=35)[a]

Independent Variables	Original *r*	Unique *r*	*F*(1, 24)
IQ scores (WISC-R)	.47*	.06	.447
Reading comprehension	.56*	.09	.838
Sex	.12	.06	.391
Teacher expectations	.82*	.45*	22.278*
Speech ratings	.42*	.09	.869
Type of enrollment	−.08	.03	.084
Number of raters	−.02	.16	2.876
Degree of hearing loss	.27	.10	1.173

[a] $R = .88$, $R^2 = .77$
* $p < .05$

Table 3

Multivariate Analysis of the Relationship between Teacher Expectations and Seven Student Characteristics (*N*=35)[a]

Independent Variables	Original *r*	Unique *r*	*F*(1, 27)
IQ Scores	.63*	.07	1.076
Reading comprehension	.82*	.32*	23.128*
Sex	.07	.07	1.038
Student aspirations	.82*	.35*	28.723*
Speech ratings	.57*	.01	.032
Type of enrollment	−.11	.05	.653
Degree of hearing loss	.12	.02	.127

[a] $R = .94$, $R^2 = .88$
* $p < .05$

Multiple regression equations were developed with teacher expectations as the dependent variable and seven student characteristics as independent variables for the combined groups and for each school to determine (a) the portion of the variance among teacher expectations that could be predicted from the seven student characteristics, and (b) the portion that each student characteristic explained when other variables were held constant. The seven student characteristics were entered into the equation using stepwise regression in the order shown in Table 3. The equation producd a multiple *R* of .94, indicating that 88% of the variance among teacher expectations could be predicted from the seven characteristics. Four variables were significant in the zero-order comparisons (IQ scores, reading comprehension, student aspirations, and speech

"...the teachers at the two schools were found to be similar on each of the variables examined, except for certification in deaf education."

ratings). Of those, only two—student aspirations and reading comprehension—were found to explain a significant portion of the variance among teacher expectations when the others were held constant.

Multiple regression equations were developed with and without IQ scores for the total sample and for both schools. In each analysis, the variables explained a significant portion of the total variance. Likewise, only reading comprehension and student aspirations were found to have contributed a significant portion to the variance when other variables were held constant.

A multiple regression equation was also developed using the teachers' individual mean levels of expectations for the students each rated as the dependent variable and eight teacher characteristics as the independent variables. The independent variables were entered into the equation using stepwise regression in the order shown in Table 4. Part correlations were also calculated for each independent variable. The purposes of the analyses were to determine (a) the portion of the variance among teacher expectations that could be predicted from those eight characteristics, and (b) the teacher characteristics that contributed significant portions to the variance when other variables were held constant. The analysis was repeated for the teachers at each school, omitting school membership from the list of independent variables.

The results for the total group (N=60) yielded a multiple R of .61, which indicated that the eight teacher characteristics accounted for 38% of the variance among the teacher's individual mean expectation level. Part correlations indicated that sex and group membership contributed a significant portion to the variance when other variables were held constant. Female teachers and teachers at School 2 were associated with higher levels of expectations.

Analyses for teachers within each school, using the seven characteristics remaining after removing group membership, revealed that a significant portion of the variance could not be predicted.

Discussion and Conclusions

The data provided by the 60 teachers and 60 seniors at two residential schools for the deaf can serve to further the understanding of factors involved in the development of the vocational self-image and career aspiration levels of deaf youth. The findings of the study suggest that teacher expectations and student aspirations were strongly related within each school and for the total sample.

The results showed that the students at the two schools surveyed did not differ significantly on a number of variables that might logically be associated with levels of occupational aspirations, such as sex, speech intelligibility, degree of hearing loss, IQ scores, and reading comprehension. Also, the teachers at the two schools were found to be similar on each of the variables examined, except for certification in deaf education. Despite the similarity of the two groups of teachers and students, the data analyses indicated that students at School 2 tended to have higher occupational aspiration levels and that teachers at School 2 tended to have higher levels of expectations for their students. One conclusion suggested by these findings was that group membership was a significant influence in the formulation of occupational aspirations and teacher expectations.

The results of the multiple regression analyses indicated that a significant portion of the variance among student aspirations (77%) could be predicted from their teachers' expectations, their IQ scores, reading comprehension, sex, speech intelligi-

Table 4

Multivariate Analysis of the Relationship between Teacher Expectations and Teacher Characteristics (N=60)[a]

Independent Variables	Original r	Unique r	$F(1, 52)$
Percentage rated	.20	.10	2.005
Subject area taught	.05	.13	3.369
Years at the school	.09	.03	.177
Years of experience	.11	.03	.230
Certification status	.12	.02	.108
Hearing status	−.08	.10	2.091
Sex	[illegible]	.21*	9.459*
School membership	.37*	.22*	10.174*

[a] $R = .61$, $R^2 = .38$
* $p < .05$

"The possibility exists that teachers overtly and covertly expressed their expectations to their students over a number of years."

bility, type of enrollment, degree of hearing loss, and the number of teacher raters. Part correlation analyses revealed that only teacher expectations contributed a significant portion to the variance when other variables were held constant. The multiple regression analyses with teacher expectations as the dependent variable and student characteristics as the independent variables showed that 88% of the variance among teacher expectations could be predicted. Part correlation analyses showed that only student aspirations and students' reading comprehension contributed significant portions to the variance when other variables were held constant.

Finally, the multiple regression analyses revealed that 38% of the variance among teacher expectation levels could be predicted from the teachers' characteristics (i.e., years at the school, years of experience, certification status, hearing status, sex, school membership, and percentage of students rated). Only sex and school membership were found to have contributed significant portions to the variance when other variables were held constant. The results indicated that female teachers and teachers at School 2 tended to have higher levels of expectations for the students they rated.

The purpose of the study was to investigate the relationship between teacher expectations and the occupational aspirations of seniors attending two residential schools for the deaf. The findings strongly support the existence of a significant positive relationship between the two variables. Questions regarding causality remain unsettled.

The results of the study can be explained in a number of ways. First, the teachers at the two schools may have been good judges of their students' potential. The findings that teacher expectations were positively related to the students' reading comprehension, IQ scores, and speech skills suggest that their expectations were based on realistic considerations of the students' potential. Another explanation is that the teachers may have been knowledgeable about their students' occupational aspirations. They may in fact have known the specific occupation that the students were considering.

Another explanation for the results is the "self-fulfilling prophecy" theory. The possibility exists that teachers overtly and covertly expressed their expectations to their students over a number of years. Thus, the students' aspirations could have been reflections of what they believed was expected of them. The results support the possibility that the teachers' expectations strongly influenced the students' occupational aspirations. The relationship between the students' aspirations and the teachers' expectations was significantly greater than the relationships which were found to exist between their aspirations and their skills and abilities (speech, reading comprehension, and IQ scores). When variables were controlled statistically by the multiple regression analysis and part correlations, only teacher expectations were found to have contributed a significant portion to the variance among students' aspirations.

Another explanation for the findings takes into consideration the social history of the students and the teachers at the two schools. One assumption of symbolic interaction theory (Blumer, 1969) is that in any type of social interaction both parties are actively engaged in predicting the behavior and interpreting the expectations of the other. Both parties to the interaction, therefore, theoretically align their attitudes and behaviors in accordance with the other's expectations. The findings support the existence of such a reciprocal effect. While teacher expectations accounted for a significant portion of the variance among student aspirations, the students' aspirations also accounted for a significant portion of the variance among the teachers' expectations.

An examination of the school settings was useful in the interpretation of the results of the study. The curriculum at School 1 emphasized vocational education. Students were required to spend two periods per day in vocational courses. The school building was traditional in design; therefore, instruction took place in self-contained classrooms. Also, the majority of the teachers (75%) were certified in deaf education. Career education was incorporated into the social studies curriculum. Because the *group life* was traditional, it is likely that the attitudes of the group, both teachers and students, would tend to be traditional. In a traditional setting, one might expect that students would be likely to aspire to occupations traditionally considered appropriate for deaf people.

The curriculum at School 2 emphasized academic preparation. Students were not required to select vocational courses. The building was open-space in design, and much of the instruction took place in open areas. The majority of the teachers (70%) were not certified in deaf education. Students were required to complete five courses in career development, including career awareness, job-seeking skills, two planned work experiences, and career planning and decision making. Career education was also stressed in other courses. Because the *group life* was innovative, it is likely that the attitudes of the group, both teachers and students, would tend to be open to change. In an innovative environ-

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"...teachers' expectations and students' occupational aspirations were strongly related."

ment, one might expect students to aspire more often to occupations not traditionally considered appropriate for deaf people. (See Tables 5 and 6 for a list of the occupations named by students during the interviews.)

Parents also play a role in determining the educational placement of their children. No data were collected regarding the expectations of the students' parents; however, the possibility exists that the parents had enrolled their children in schools which reflected their expectations. Parents who selected School 1 may have expected their children to pursue vocational training in high school; parents who selected School 2 may have been influenced by the knowledge that the school stressed academic preparation.

In summary, the findings of this study support the conclusion that in the two schools investigated, teachers' expectations and students' occupational aspirations were strongly related. Further, the data suggest that the formation of expectations and aspirations was a function of the interaction among teachers and students within each group setting. The results suggest that a group setting which is traditional may be more conducive to the formation of traditional expectations and aspirations than one which is innovative in character.

Table 5

Student Aspirations and Assigned Ratings in School 1

(N = 24)

Rating	Occupation(s)[a]
3	Printer, electrician
1	Waitress, cook
3	Photographer
1	Orderly
1	Stockroom clerk, electronics assembler
1	Cook, janitor
5	Architect
4	Computer technician, math-related job
4	Keypunch operator
5	Engineer
5	Physical education teacher
5	Restaurant owner
2	Fiberglass installer
4	Typist, medical lab technician
3	Commercial artist
5	Body shop owner
1	Road construction worker, laborer
1	Janitor
1	Nurse's aide, janitor
1	Window washer, helper in office
4	Keypunch operator, typist, printer
3	Diesel mechanic
3	Printer, motorcycle mechanic
4	Keypunch operator

[a] Ratings were assigned to the first occupation named by the students; a 5 indicates a job with high socioeconomic status, a 1 indicates a job with low socioeconomic status.

Table 6

Student Aspirations and Assigned Ratings in School 2

(N = 36)

Rating	Occupation(s)[a]
4	Keypunch operator, clerk
2	Baker
1	Washing cars, mowing lawns
5	Teacher
3	Mason, truck driver
4	Keypunch operator
3	Medical lab technician
4	Mailroom clerk
5	Businessman
5	Lawyer, doctor, teacher
3	Medical lab technician
2	Machine repairer
4	Secretary
4	Computer science technician, social worker
3	Auto mechanic
5	Preschool teacher
5	Forester
5	Teacher
5	Electrical engineer
3	Electrician, construction worker
5	Biologist, chemist, doctor
4	Congressman's aide
4	Banker
3	Carpenter
1	Childcare worker
3	Electrician
4	Accounting clerk
2	Machine repairer
5	Drafting teacher
4	Data processor, computer operator
3	Photographer
1	Office helper
3	Bricklayer
3	Auto body worker
4	Typist, file clerk
5	Political scientist, economist

[a] Ratings were assigned to the first occupation named by the students; a 5 indicates a job with high socioeconomic status, a 1 indicates a job with low socioeconomic status.

Implications for Further Research

One major goal of deaf education is to change the occupational orientation of deaf youth, especially to free them of the stereotypes which limit their occupational choices. The findings of the study suggest that one way to reach this goal may be by changing the orientation of the school setting, including its curriculum emphasis. Career education programs, therefore, should include assessments of both student and teacher attitudes. Very little information exists about the expectations that teachers of deaf students have for their students. If teachers in general have low expectations for students based on stereotyped views about deaf people and their past oc-

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"...further investigation is [needed on] the impact of speech skills on the occupational mobility of deaf people."

cupations, these attitudes could affect all aspects of school life, including the selection of instructional objectives, instructional materials, and instructional methods. The implications for educational programs for deaf students extend beyond the expectations teachers may have for their students' future occupations.

Research is also needed regarding parental expectations and their relationship to the selection of schools for their children, as well as their relationship to students' career aspirations. Historically, deaf people have been thought to be intellectually inferior. Evidence now supports the conclusion that deaf people exhibit normal intelligence and that, as a group, they vary in the same manner as does the general population (Moores, 1978). Parental expectations, like teacher expectations, may be rooted in stereotypes based on attitudes of the general social group.

Another area which needs further investigation is the impact of speech skills on the occupational mobility of deaf people. In this study, 62% of the students were rated as having poor speech skills. A poor rating indicated that either the interviewer or the researcher was unable to understand most of the student's speech. Speech intelligibility ratings were significantly correlated with student aspirations and teacher expectations in the zero-order correlation analyses. However, the multiple regression analyses indicated that when all variables were controlled, speech intelligibility accounted for a small and statistically insignificant portion of the variance among either student aspirations or teacher expectations. Studies by Phillips (1975) regarding employer expectations and by Schroedel(1976) and Schein and Delk (1974) suggest that speech skills are extremely important with respect to the occupational levels of deaf people. The findings of this study suggest that neither the students nor the teachers at the two schools investigated were strongly influenced by the students' speech skills. Future researchers should investigate the attitudes of deaf students and their teachers toward oral communication skills and, specifically, their attitudes toward communication with hearing people.

Very little information is available about teachers of deaf students—their attitudes, their teaching methodology, or their competence in communication methods. Alexander (1978) suggested that the total communication method which was used in both schools investigated is often not fully understood by teachers and is often implemented incorrectly. Much research has been conducted regarding the nature of teacher-pupil interaction in schools with hearing populations, and its effect upon student behavior has been well established (Brophy & Good, 1974). Information is sorely lacking in this area with teachers and deaf students. Research is needed to uncover the psychodynamics of the teacher-pupil relationship in residential schools, as well as in other programs for deaf students.

Data gathered in two of the 62 or more residential schools for the deaf cannot be automatically generalized to all residential schools. However, the magnitude of the relationship found in the two schools investigated indicates that teacher expectations are likely to be related to student aspirations in other schools. Further research with a wider data base is needed to investigate the hypothesis.

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Infusing Career Education into the Content Areas

Jacqueline Maeder

Career education has been a highly visible force in American education for a number of years. In 1974, Congress created the Office of Career Education to respond to the need for educational reform in preparing students for the world of work. Since then, millions of dollars and substantial amounts of time have been devoted to the development, testing, and revision of career education materials. Because of the rapidity of its growth, however, the career education concept is still often misunderstood, and the instructional procedures necessary to implement career education are poorly defined.

What Is Career Education?

Career education has been defined in many ways. All of the definitions generally encompass the following characteristics:

1. basic academic skills,
2. increased self-awareness,
3. career implications of the content areas,
4. increased knowledge about work,
5. decision-making, job-seeking, job-getting, and job-holding skills,
6. good work habits,
7. personally meaningful set of work values,
8. increased awareness for changing career options or means for continued education, and
9. productive use of leisure time (Hoyt, 1978; Hoyt, n.d., Preli, n.d.).

Essentially, career education involves all the activities or experiences through which students learn about and prepare themselves for work.

Questions and issues regarding the administration, organization, and implementation of career education programs are as yet unanswered. Opinion as to how this is to be done varies and educators do not support any single theory.

How Can We Implement Career Education?

Two dichotomous career education implementation procedures have been explored. They are (a) the creation of separate career education materials/courses (the *add-on* approach), and (b) the addition of career education objectives and concepts into existing materials/courses in the traditional content areas (the *infusion* approach).

Although there have been few studies on the relative merits of either procedure, most career education advocates support the infusion approach. There are a number of reasons for this support (Hoyt, n.d.). Generally, career education supporters view career education as a logical part of the instructional process because preparation for work is a primary goal of the educational system. These supporters believe that career education skills and concepts can be effectively and naturally given to students as part of their regular, traditional instruction. They feel that students may be more motivated to learn traditional content when the career implications of the content are emphasized. Therefore, they believe that career education should occur in all grade levels and in all content areas, and that it should be taught by all teachers knowledgeable in these content areas. Teaching career education, then, becomes a secondary responsibility of every teacher in every classroom in the country. Teachers, curriculum writers, and others involved in the educational process must find ways to infuse or incorporate career information into traditional content areas so that the knowledge is seen as important and relevant by the students.

How Can We Develop Materials That Infuse Career Education?

Developing and implementing a full-scale career education program within a school or a school district is an involved and time-consuming process. To succeed, the process needs the support and active participation of administrators, teachers, curriculum writers, evaluators, aides, community resource personnel, and many others. Usually, each school or district must develop or adapt a program that fits its needs and resources. There is no one best method. Individual teachers and curriculum writers, as key resource persons, can integrate career concepts into their curriculum in a number of relatively simple, yet effective, ways and can infuse as much or as little career education as appropriate within each instructional sequence.

Teachers and curriculum writers need two additional skills in order to develop materials that infuse career education: knowledge about the career implications of their content area(s), and knowledge of how to use community resources in career activities (Hoyt, n.d.). Knowledge of content and knowledge of the career education implications of the content are the guideposts of the infusion process. Once teachers and curriculum writers have these two competencies, they can infuse career education by simply asking how each concept being taught relates to the world of work. This process of infusion then becomes one of planning. Preli (p. 17, n.d.) has outlined the five steps involved in this planning process.

1. Be aware of the career outcomes for the grade level or subject area.
2. Be aware of the instructional content and objective for each subject.

3. Match an instructional objective with a career outcome.
4. Plan an activity that combines the instructional and career objectives.
5. Evaluate the activity.

The following examples are included to clarify the process (Buffington, 1979).

1. *Content* Language
   Objective Without prompting, the student will recite or write the alphabet

   Knowledge about work can be integrated into this task by
   a. listing occupations that begin with each letter of the alphabet
   b. displaying illustrations/ photographs of workers in alphabetical order
   c. preparing a bulletin board of workers from *a* to *z* and/or changing letters and corresponding workers periodically

2. *Content* Geography
   Objective Given a map of the U.S., the student will identify geographic features (e.g., mountains, rivers, deserts, etc.)

   Knowledge about work can be integrated into this task by
   a. collecting photographs of workers in different careers and identifying those jobs suitable to different geographic regions
   b. discussing how career choices may be affected because of the geographic region in which a person lives
   c. separating the occupations found in different geographic regions into one or more of the career clusters (e.g., Natural Resources, Agribusiness, etc.)

3. *Content* Literature
   Objective Given a short story, the student will interpret character traits and characteristics

   Knowledge about work can be integrated into this task by
   a. describing storybook or nursery rhyme characters in terms of their "role" or "station in life," their problems, and their ambitions or dreams
   b. discussing the men's and women's roles (sex stereotyping) in novels in terms of their jobs, their behavior, how others in the novel describe or feel about them, etc.

4. *Content* English/Creative Writing
   Objective After completing a unit on poetry, the student will write at least one poem

   Knowledge about work can be integrated into this task by
   a. asking students to list one or two occupations that interest them and write a poem that tells about that job
   b. asking students to write a job title vertically on a sheet of paper and use the letter that falls on each successive line as the first letter in the word that begins that line

   Example: Diagnose,
   Operate, and
   Commiserate.
   These are the duties
   Of the hospital
   Resident who
   yearns to be a
   doctor.

Conclusion

Career education is a basic goal of the educational system and should be integrated/infused into the entire curriculum for all students by all members of the instructional staff. A great amount of planning is necessary for career education to become an integral part of an instructional program. No one process is applicable in every classroom or in every school. The procedures suggested here are only one way to approach implementing career education in the traditional content areas. These procedures should allow teachers and curriculum writers the flexibility needed to infuse the appropriate amount of career education emphasis into their classes or programs.

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Using Principles of Instruction and Evaluation in Infusion of Career Education Concepts

Nancy B. Fones

General goals for infusion of career or work concepts can be thought of in terms of how often topics such as jobs, values, talents, abilities, wants, decisions, independence, and survival reading and math skills are considered within content or academic areas. In order to maximize the specific learning results of infusion activities, widely accepted principles of sound instruction should be applied.

Some principles of good curriculum and classroom methods or procedures seem particularly appropriate for use with hearing-impaired students. At the risk of implying that evaluation is separate from—rather than an integral part of instruction—two lists of these principles follow. The first list of principles addresses the experience and English language levels of many hearing-impaired students with respect to how instructional methods or materials are developed, selected, and implemented. The second list of principles encourages the establishment of realistic expectations for evaluating student outcomes. The lists complement and extend each other if we agree that we must teach what we expect to be learned, and that we should test what we actually have taught (Eckard & McElhinney, 1977, p. 615; English & Kaufman, 1975, p. 43).

Principles for Instruction

1. Focus just as much attention (perhaps more) on effectively implementing available curriculum products as on locating better ones.
2. Adopt and adapt bits and pieces of relevant, commercially available instructional products and curriculums instead of creating new materials.
3. Relate each classroom or homework activity to the specific change (knowledge, skill, performance, or attitude) desired or expected of a particular student.
4. Choose or develop performance objectives that are important and relevant to the specific student *and* that reflect the specific learning and teaching theories supported by the school.
5. Design several activities to accomplish each specified learner performance objective. Tag each activity as being either introductory, reinforcing, remediating, or enriching in nature.
6. Create highly visual techniques to present ideas and information, including roleplaying. Use real-life demonstrations in a show-tell-do sequence. Reinforce learning through a second and (when possible) third sense.
7. Order the presentation of factual information according to sequence, time, or logical flow of small tidbits. Gradually increase tasks from simple to more complex learning.
8. Use sophisticated-looking materials and presentations.
9. Use self-contained instructional materials with few component parts in order to keep organized.
10. Teach all vocabulary and difficult language structures in context.
11. Limit the use of passive voice and other difficult language constructions, including idioms (Rosenbloom, 1979, pp. 1–3).
12. Adapt a questioning technique that fosters the development of thinking skills and problem-solving methods while infusing career concepts into academic content (e.g., When do you use math? Which of your relatives works with a lot of people? Can I fire you from the class?).
13. Present and ask for examples and nonexamples of content such as rules, regulations, and guidelines. Show correct and incorrect responses, applications, and generalizations.
14. Let students teach each other and the teacher, when possible and appropriate, using real-life manipulatives such as job applications, social security cards, credit request forms, and bank statements.
15. Allow and encourage opportunities for individual preferences and choices. Let students participate in the decision of how to accomplish specific learning tasks.
16. Teach values and taboos generally held by our work-oriented society. Give students practice in determining the difference between fact and opinion, legal and illegal.
17. Discuss daily living, grooming, and health needs and how taking care of oneself can extend one's life. Openly share thoughts, hopes, dreams, fears, frustrations, fantasies; discuss the differences in each.
18. Grasp every opportunity to demonstrate and emphasize good work habits, organizational skills, and interpersonal relations. As a class, discuss these issues with workers who are deaf.

Principles of Evaluation

1. Adopt a criterion-referenced evaluation technique whereby achievement is only compared to standards set for a given student. The amount of improvement is not as important as the direction of movement, so, when appropriate, think in terms of

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minimum required rather than maximum preferred.

2. Involve students in planning and charting their evaluations.
3. Use evaluation results to maintain *or* to change instruction, materials, or expectations, instead of primarily focusing on remediating the student. Possible changes would be to add instructional time, change the number or nature of learner activities, incorporate more practice, or promote the student to the next unit.
4. Give practice test items, review questions, immediate feedback, criticism, and praise.
5. Match the evaluation items or performance measures directly with the theoretical assumptions, learning objectives, general approaches, classroom activities, teaching and learning styles, and instructional resources for the particular unit being taught.
6. Establish a specific mastery level; create or select a variety of ways for a student to demonstrate mastery of an objective. Some examples are listed below.
   a. self-tests, quizzes, log charts, diaries, work-samples
   b. teacher observations
   c. games, simulations
   d. roleplaying activities, demonstrations, videotapings
   e. parent reactions
   f. case studies
   g. other teacher recommendations and referrals
7. Use preassessment information or a proficiency measure to determine if the student already has sufficient competency in terms of this particular content. Make sure the evaluation measure directly matches the planned instruction. At any point in time, be able to distinguish students who have achieved an objective from those who haven't.
8. State evaluation tasks, directions, and expectations to the student fully, clearly, and concisely. Repeat explanations when necessary.
9. Do not build negative correct answers into multiple choice test questions (McKee, 1978, p. 26).
10. Inform students that timelines are very important in the world of work. Present students with a variety of timed and untimed performance tasks. Time limits should be appropriate.
11. Consider evaluation as an ongoing assessment of learning, rather than as a one-shot test at the end of a course. Use a variety of interim checks on amount and rate of learning.

These instructional and evaluation principles should prove effective when used to infuse career education concepts into the normal activities of a school day.

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Periodicals in Career Education and Vocational Education

Journals and newsletters provide up-to-date information on new trends and practices in the rapidly expanding field of career education. Brief descriptions follow for publications most likely to carry articles about exceptional individuals. Names and addresses of general career education and vocational education periodicals are also listed.

Career Development for Exceptional Individuals is the official publication of the Division on Career Development of The Council for Exceptional Children. *Career Development* is issued twice yearly, in the spring and fall. The first issue carried articles dealing with measurement in career education for handicapped students, career awareness for handicapped students in elementary schools, and career education for handicapped youth and adults in the 1970s. Special features include ERIC notes, brief reports, book reviews, a Washington report, and notes on personnel preparation. Subscriptions are available without membership. Orders should be sent to Division on Career Development, The Council for Exceptional Children, 1920 Association Drive, Reston, VA 22091.

The Journal of Career Education is a publication of the College of Education at the University of Missouri. The *Journal* is published on a quarterly basis. Most issues follow a thematic approach and are devoted to a topic that is particularly timely. Topical issues have focused on subjects such as sex-role stereotyping, special education, and labor views of career education. Correspondence should be addressed to Education Building, Room 111, University of Missouri, Columbia, MO 65201.

The Journal for Vocational Special Needs Education began publication in October 1978 and is published by the National Association of Vocational Education Special Needs Personnel, which is affiliated with the American Vocational Association. Contents of the new journal will center on research and general articles of interest to special needs personnel. Planned features include book abstracts, conference reports, a Washington report, and editorials.

The following periodicals contain general information on career and vocational education.

American Vocational Journal
American Vocational Association, Inc.
2020 N. 14th Street
Arlington, VA 22201

Career Education Digest
Pennant Publishing Company, Inc.
P.O. Box 1687
Newport Beach, CA 92663

Career Education Quarterly
National Association for Career Education
Room 214
School of Education
Boston University
605 Commonwealth Avenue
Boston, MA 00215

Journal of Vocational Education Research
The National Center for Research in Vocational Education
The Ohio State University
1960 Kenny Road
Columbus, OH 43210

Career Education News
Bobit Publishing Company
65 E. Palatine Road, Suite 101
Wheeling, IL 60090

Career Education Workshop
Parker Publishing Company, Inc.
Route 59A at Brookhill Drive
West Nyack, NY 10994

Centergram
The National Center for Research in Vocational Education
The Ohio State University
1960 Kenny Road
Columbus, OH 43210

National Newsnotes
The National Association of Vocational Education Special Needs Personnel
American Vocational Association
1510 M Street, NW
Washington, DC 20005

News From NACE
The National Association for Career Education
Office of Career Education
Glassboro State College
Glassboro, NJ 08028

Newsletter
Division on Career Development
The Council for Exceptional Children
1920 Association Drive
Reston, VA 22091

Resources in Vocational Education
The National Center for Research in Vocational Education
The Ohio State University
1960 Kenny Road
Columbus, OH 43210

Information Sources Related to Career Development

ERIC Clearinghouse on Adult, Career, and Vocational Education
The National Center for Research in Vocational Education
The Ohio State University
1960 Kenny Road
Columbus, OH 43210

ERIC Clearinghouse on Handicapped and Gifted Children
The Council for Exceptional Children
1920 Association Drive
Reston, VA 22091

National Center for Career Education
P.O. Box 7815
Missoula, MT 59801

Career Development Resources from ERIC

ERIC documents with ED numbers may be ordered from ERIC Document Reproduction Service (EDRS), P.O. Box 190, Arlington, VA 22210. ERIC documents with EJ numbers refer to journal articles.

ED 188 368

Evaluation of an Inservice Program: Summary Report of Intensive Training and Technical Assistance.
Young, Marsha; and others; April 1980, 30 p.

The paper reports on the formative evaluation of a career education national inservice training program for educators in 29 schools and programs for the hearing impaired. The inservice was divided into two stages: an intensive training workshop for administrators, teachers, and counselors; and technical assistance on goal planning and milestone reporting systems. Among results of the workshop evaluation were that participants' self-reported level of participation was rated good to very good, with ratings tending to increase across successive workshops; participant posttest scores were significantly higher than pretests for three of the four workshop audiences; and media supporting the workshop strategies were very effective with a mixed deaf and hearing audience. Technical assistance evaluation covered dissemination, consultation, and networking aspects. Effective teamwork and a start at documenting a comprehensive career education plan were reported by the schools in each region during the six-month period after intensive training.

ED 192 468

Trainer's Manual: Career Education/Planning Skills.
Egelston-Dodd, Judy, Ed.; 1980, 477 p.

The document provides guidelines for conducting a workshop for administrators, teachers, and counselors on career education for the hearing-impaired student in grades K through 12. Initial chapters address the history and purpose of the workshop; concept outline; instructions for using the manual; selection, registration, and preworkshop orientation of participants; workshop facilities preparation; and preparation of the trainer. The bulk of the document contains 18 modules, each with strategies designed to be implemented in 45 minutes (except for two 90-minute modules). Each module begins with statements of the trainer goal, learner outcomes, and advance preparation procedures; followed by an outline of materials/resources needed with concepts covered; module procedures (including time, a code for visuals to be used, and trainer narrative); and a concept outline. Modules cover such topics as self-awareness as the basis for career development, decision-making techniques, and technical assistance resources. A supplementary section provides additional instructions for each module; and appendixes contain orientation materials, transparency masters, and a summary outline of the delivery skills workshop.

ED 184 287

Mainstreaming Secondary Level Deaf Students in Occupational Education Programs. Final Technical Report (Includes Appendixes A through J).
Munson, Harold L.; Miller, John K.; July 1979, 892 p.

A final report details 10 objectives in a study of mainstreaming secondary level deaf students in occupational education programs. Sections present instrumentation and procedures used in gathering data for each of the following 10 objectives: (1) philosophical views of the programs; (2) profile of the student population; (3) evaluation practices; (4) instructional strategies and methods; (5) articulation and communication; (6) knowledge and attitudes of school personnel toward deafness; (7) social interaction and friendship patterns among the target population; (8) placement practices; (9) followup of program graduates; and (10) reaction, opinions, and experiences of deaf students and their parents participating in the programs. Much of the document consists of appendices such as various interview protocols and schedules for the different objectives, as well as student forms and record sheets.

ED 178 708

Career Development for the Hearing Impaired: Proceedings of Two National Working Conferences (Washington, D.C., Feb. 24-25, 1978; Rochester, N.Y., Sept. 21-23, 1978)
Updegraff, David R., Ed.; and others; 1978, 176 p.

Proceedings of two national working conferences held to discuss career education for the hearing impaired are in this volume. Administrative, counselor, and teacher representatives from schools having experience in career education attended. The report covers issues they addressed following the keynote speeches, appearing in Section 1, given by specialists on obstacles to be overcome, the relevance of career education for the hearing impaired, directive counseling from a vocational rehabilitation per-

spective, and how career education can meet the needs of business and industry. Section 2—What Have We Learned?—begins with the list of areas for discussion followed by separate summaries of what the three groups of participants had to say. Section 3 concerns identification of the most important and urgent issues on which consensus was sought, with votes tabulated; inservice staff training was voted most important and urgent. "Where Do We Go From Here?"—Section 44—notes the beginning of the National Project on Career Education which hopes to put ideas into action and organize technical assistance to schools participating in regionally based, inservice training programs. Appendixes contain the five papers presented and lists of participants and of preconference recommended readings.

EJ 247 108

Life Skills and the Experiential Curriculum.
Bryant, Patricia
Volta Review, v 82 n 6, p 353–359, October–November 1980

Experiential teaching is seen as an approach for developing life skills through field trips, career education projects, self-awareness experiences, and group activities.

EJ 236 813

A Mediated Course in Career Development.
Noretsky, Martin; Beach, Roger
American Annals of the Deaf, v 125 n 6, p 826–833, September 1980

A multimedia course in career development for hearing-impaired freshmen at Gallaudet College is described. The course, part of a five-stage model, provides a teacher's guide, student notebook, videotape, and slide series dealing with career awareness and career exploration. The 16-lesson course syllabus is appended.

EJ 236 715

Special Problems of Deaf Adolescents and Young Adults.
Nash, Kenneth R.; Castle, William E.
Exceptional Education Quarterly: Special Issue on Special Education for Adolescents and Young Adults, v 1 n 2, p 99–106, August 1980

The article examines some of the special academic, psychosocial, and career problems of adolescents and young adults resulting from early severe auditory deprivation. The academic, psychosocial, and career development of deaf adolescents are considered.

EJ 206 140

Facilitating Career Guidance of Deaf Students: Challenges and Opportunities for Counselors.
Lombana, Judy H.
Vocational Guidance Quarterly, v 27 n4, p 350–358, June 1979

Describes the vocational characteristics and needs of hearing-impaired students and offers practical suggestions to facilitate the career guidance of deaf students in public education. These include building self-confidence and social skills of the deaf while providing accurate job information and reducing occupational stereotypes. Educating the community is also recommended.

EJ 184 865

Career Development Programs in Residential Schools for the Deaf: A Survey.
Twyman, Lee H.; Ouellette, Sue E.
American Annals of the Deaf, v 123 n 1, p 10–17, February 1978

Sixty-four residential schools for the deaf were surveyed regarding ten aspects of career education programs, including objectives, details of program implementation, program content, special needs, environmental factors, and occupational choices.

EJ 192 559

Developing Thinking Skills in Career Education.
DiFrancesca, Sal
Volta Review, v80 n 5, p 351–354, September 1978

"The Step Method: Learning and Practicing Thinking Skills" was developed for deaf students as a career education curriculum.

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New from ERIC

Documents listed below have been selected by Jean N. Nazzaro, an information specialist with the ERIC Clearinghouse on Handicapped and Gifted Children. The Clearinghouse is operated by the Council for Exceptional Children, 1920 Association Drive, Reston, Virginia 22091, and is funded by the National Institute of Education.

ED 197 578

Appropriate Educational Placements for Hearing-Impaired Children.
Rosen, Roslyn; August 1980, 29 p.
Gallaudet College, Washington, D.C. 20002

The report presents an overview on the status of appropriate placements for hearing-impaired students. Information is presented in question and answer format on such topics as the definition and extent of hearing impairments, hearing aids, lipreading, speech difficulties of deaf children, sign language, psychological needs of deaf students, the implications of an appropriate education for the hearing impaired, educational placement alternatives, least restrictive environment, cost of education, student and program characteristics affecting placement decisions, the role of special schools, barrier-free environments, support and related services, the functions of an interpreter, curriculum modifications, deaf adult role models, inservice needs of teachers, parent education, and state resources.

ED 203 628

Support for Parents and Professionals: A Key Issue for the Field of Deaf Education in the 1980s.
Meadow, Kathryn P.; January 1980, 13 p.
Kendall Demonstration Elementary School, Gallaudet College, Washington, D.C. 20002

Sources of stress for educators in general include the tightening economic situation and changing social trends that indicate more and more teachers will be single parents with young children. Deaf educators face the additional stress of slow student progress, antagonism from parents, the existence of additional handicaps in deaf children, increased requirements on teacher time due to federal regulations, and controversies in the field. Teacher stress and burnout can be prevented by building support systems, changing job assignments, recognizing teachers' achievements, granting time out from the classroom during the day, and enlisting the help of mental health consultants.

ED 203 627

Limited Immersion in Cued Speech: A Case Study
Gordon, Malcomb; and others, 1979, 34 p.
Model Secondary School for the Deaf, Gallaudet College, Washington, D.C. 20002

The case study examines the effects on the receptive and expressive English language of a deaf 14 year old after a period of limited language immersion using Cued Speech, in which every sound in a word is represented both expressively and receptively. In a four-week period the subject spent approximately 14 hours per week with a modeler who cued speech through a range of activities. Results of tests measuring expression, comprehension, reception, and syntax indicated that accuracy in receiving cued sentences improved from pretesting to posttesting, although reception of cued syllables and words was more accurate in pretesting than reception of sentences. Cued Speech functioned as a clear representation of spoken English while it did not appreciably supplement the subject's auditory processing of speech. The rate of Cued Speech expression improved markedly. There was slight evidence to indicate improvement in English syntax.

ED 203 626

Futurism in the Education of the Deaf: Directions and Alternatives for the 80s.
Marshall, William J.; 1978, 51 p.
Available from OUTREACH, Box 114, Model Secondary School for the Deaf, Gallaudet College, Washington, D.C. 20002

The author presents a rationale for the study of futurism in education and analyzes the effects of significant future changes upon deaf education in the 80s. The roles that change agents play in influencing the permanence of innovations within the school are examined: advocacy, information sharing, and organizational development training. Curriculum considerations, particularly in light of the "back to basics" movement, are explored. The importance of getting all citizens involved in forecasting possible, probable, and alternative futures, and in determining which of these futures are preferable, is pointed out. Unmet needs in the area of legislation are summarized.

ED 203 625

Communication Characteristics of Students Entering MSSD 1977-78.
Cowan, Nancy S.; and others, 1978, 24 p.
Model Secondary School for the Deaf, Gallaudet College, Washington, D.C. 20002

A communication profile of each student entering the Model Secondary School for the Deaf (MSSD) is composed of rankings in five areas: expressive manual communication including signing, fingerspelling, and synchronization; speech intelligibility; articulation; speechreading, including words and sentences; and audiometric test performance, including puretone air conduction testing, audiometric speech testing, and impedance testing. The profile is used for appropriate placement, as well as for providing parents with realistic information about communication skills. The profiles of 86 students entering MSSD are graphed for all five areas.

ED 203 624

The Development of Preposition Usage in the Written English of Deaf Adolescents.
Kluwin, Thomas N.; 1979, 21 p.
Gallaudet Research Institute, Washington, D.C. 20002

Preposition usage by students at a secondary school for the deaf was examined in subjects' response to a videotape showing a young woman using Signed English with a voiceover. A descriptive essay was collected in response to a question she posed. Essays were typed verbatim into computer storage and then coded for grammatical features using a multiple error code. Three types of preposition users were identified. Errors in preposition usage were rank ordered (high error/high frequency, high error/low frequency, low error/high frequency, and low error/low frequency). Sources of confusion in preposition usage are noted, and a model for preposition development is briefly considered.

ED 203 623

Auditorally Augmented Interactive Pre-Dimensional Television As an Aid to Language Learning among Deaf and Hearing-Impaired Children: Final Report.
Withrow, Margaret S.; March 1980, 62 p.
Gallaudet College, Washington, D.C. 20002

A project is reviewed with combined television, videotape and three-dimensional computer graphics to provide new language experiences to hearing-impaired children. The animation system is described in detail. Field testing in two schools was carried out with 52 students (7 to 15 years old). Subjects demonstrated improvement in scores between pretest and posttest, with subjects exhibiting a high degree of interest in the videotapes. Appendices include four videotape scripts and sample response sheets.

ED 203 621

Four Experiments in Speech.
Ling, Daniel; 1980, 14 p.
Model Secondary School for the Deaf, Gallaudet College, Washington, D.C. 20002

Four experiments on speech reception and speech production in deaf children are reported. In study I, conversations of seven deaf children (6 to 12 years old) were recorded and analyzed, indicating that their speech was no less intelligible than that of their normally hearing peers. The deaf children had received three or more years of parent/infant training. Study II demonstrated that skills acquired by 17 deaf children (10 to 17 years old) taught by Cued Speech did not transfer to everyday communicative speech. Study III, involving seven pairs of profoundly hearing-impaired children (5 to 7 years old), demonstrated that children taught to produce speech patterns learned more phonetic level targets than children who merely listened and discriminated speech patterns without producing them. The final study showed that Cued Speech is a viable method of providing children with a method of effective speech reception.

ED 203 620

A Survey of 1971-1977: Graduates of the Model Secondary School for the Deaf.
Uno, T.; Petty, C.; 1979, 40 p.
Model Secondary School for the Deaf, Gallaudet College, Washington, D.C. 20002

A survey of 105 graduates of the Model Secondary School for the Deaf (MSSD) from 1971 to 1977 was conducted. Although the majority of the graduates were single, earlier classes tended to have greater numbers of married graduates than the more recent classes of 1976 and 1977. Approximately 70% have attended or are now attending postsecondary educational programs, and 54% were employed, while 9% were not. The reactions of the graduates to MSSD were largely positive, particularly to the services provided by counselors, advisors, and teachers. Ss

indicated the need for developing better study skills and for putting greater emphasis on reading and writing. Ss rated the courses offered by MSSD.

ED 203 604

Hearing Impaired Manual: Recommended Procedures and Practices.
July 1980, 97 p.
Illinois State Board of Education, Springfield, Division of Specialized Education Services.

The booklet outlines Illinois' plan for delivering educational services to hearing-impaired children. The history of the state's involvement with this population is traced from 1960. Guidelines are set forth for four major topics (sample subtopics in parentheses): identification and assessment (awareness of the problem, distinctions between deaf and hard of hearing, and the auditory-visual learning process); appropriate educational environment (problems in developing individualized educational programs, facilities and equipment standards, and post-secondary education for hearing-impaired students); qualifications and preparation of personnel (recruitment, selection, and professional standards); and inservice training (instructional models and target groups for in-service training). Nine appendices include a listing of state teacher training institutions with programs for teaching hearing-impaired students, and a room acoustics evaluation for classrooms with hearing-impaired students.

ED 203 573

Analysis of Preferred Textbooks in Speech-Language Pathology and Audiology.
Condon, Marilyn; November 1980, 19 p.

Directors of 100 undergraduate training programs in speech-language pathology and audiology were surveyed about the readability level and faculty satisfaction with currently used textbooks. For each of seven fundamental courses, Ss were asked to indicate the academic level at which students typically completed the courses, the textbook currently used in the course, and the degree of faculty satisfaction with the text. The most preferred textbook(s), by course, were analyzed for predicted readability using the Fog Index. Results showed that for over half of the preferred textbooks, predicted readability exceeded mean student level by 1.4 to 4.1 years. The highest degree of faculty satisfaction was with texts having a predicted readability level which paralleled the typical student level.

ED 203 572

Applying Bilingual Models in Classrooms for the Hearing Impaired.
Luetke-Stahlman, B.; November 1980, 10 p.

The author examines the use of oral bilingual models in programs for the hearing impaired, contending that the native language of a hearing-impaired child of hearing parents is frequently sign language. It is suggested that classrooms for the hearing impaired could combine numerous modes (Signed English, Signing Exact English, and American Sign Language) according to models of monoliterate and partial bilingualism. It is also pointed out that a native or near native signing staff would be necessary if such a model were adopted.

ED 203 568

Deaf Students' Use of Semantic Differential for Evaluation.
Convey, John J.; August 1979, 15 p.
Catholic University of America, School of Education, Washington, D.C.

A semantic differential containing two concepts and seven bipolar adjective scales consisting entirely of evaluative adjectives was used to obtain evaluative feedback on instructional materials from 193 deaf, first year college students. A factor analysis of the responses yielded a single factor labeled Evaluation when each adjective scale was averaged over the two concepts. When each scale by concept combination was used as a variable, a factor analysis yielded two factors defined by the scales within each concept. The results indicated that the students responded to the scales in a unidimensional manner and were able to differentiate between the two concepts. Findings lend support to the appropriateness of using the semantic differential for evaluation purposes with deaf students.

ED 204 981

Curriculum Guide Bank: A Catalog of Contributed Curriculum Guides.
January 1981, 106 p.
Available from: Curriculum Guide Bank, Gallaudet College Press, Kendall Green, Washington, D.C. 20002

The catalog contains information on curriculum guides submitted by 18 schools for the deaf. Entries include information on title, age/grade level, ordering, and topics available for the following subject areas: art, career edu-

cation, communication, foreign language, mathematics, multihandicapped, performing arts, physical education, preschool, reading, science, special studies, and study skills. An order form for purchasing the materials through the Curriculum Guide Bank at Gallaudet College is included.

ED 204 973

Step toward Effective Production of Speech (STEPS): No. 1—Beginning to Use a Hearing Aid.
Sheeley, E. C.; McQuiddy, D.; 1979, 36 p.
Alabama University, Tuscaloosa; Partlow State School, Tuscaloosa, Alabama

The first of a series of booklets for parents of deaf-blind children presents basic information on using hearing aids. Suggestions are given for protecting the aid and putting in the child's earmold. Parents are advised to put the aid on everyday and to do simple activities involving music and speech. Keeping a record during listening time is encouraged to monitor progress toward goals.

ED 204 974

Steps toward Effective Production of Speech (STEPS): No. 2—Words and Meanings: The Problem of Deaf-Blindness.
Sheeley, E.; McQuiddy, D.; 1980, 57 p.
Alabama University, Tuscaloosa; Partlow State School, Tuscaloosa, Alabama

The booklet, one in a series for parents of deaf-blind children, presents information in large type about the nature and cause of deaf-blindness. A drawing of the ear is followed by a simplified discussion of the ear's functioning and definitions of terms (such as spondee threshold) used in hearing testing and hearing loss. Similarly, a drawing of the eye is followed by a discussion of eye functioning and an explanation of terms used in vision testing and vision loss. Related problems are then defined, followed by a more complex glossary.

ED 204 964

Tutoring/Notetaking As a Support Service for Deaf Students.
Wilson, J. J.; April 1981, 19 p.
Rochester Institute of Technology, Rochester, New York

The paper describes a program developed at the National Technical Institute for the Deaf in which hearing-impaired students in the academic mainstream receive tutoring/notetaking support services. A notetaking system is employed in which the notetaker writes from four to six readable copies of notes at one time. The notetaker, a trained hearing person, then acts as the tutor for the class, as needed by deaf students. Tutors are trained in problems related to hearing loss, techniques and functions of notetaking, and tutoring. Tutors must be prepared to deal with requests for clarification of assignments, test preparation, course content study, or project completion. An exerpt from the training manual is included to illustrate training in notetaking. The tutor's potential role in acting as a liaison with teachers can help to ensure success.

ED 204 915

Memory for Stories in Language-Impaired Children.
Graybeal, C. M.; October 1980, 18 p.

The ability of language-impaired children to remember and retell two stories within their lexical and syntactic grasp was investigated with 12 language-handicapped and 12 normal children (7 to 9 years old). An audiotape of the child's retelling of the stories was analyzed in terms of accurate recall, plausible information added during recall, errors in recall, the organization of recall, and the ordering of story information. Results indicated that the language-impaired children exhibited recall deficits in the amount of information recalled when compared to the normal children. They did not differ from normal children in the amount of plausible information added, the number of errors in recall, the organization of their recall, or in the accurate ordering of story information. An additional test of their ability to process single sentences showed that the language-impaired children had poorer short-term recall than normal children two years younger. A sample story, statistical data, and graphs are appended.

ED 204 914

Deaf Children's Performance on Pattern Recognition Tasks: Effects of Different Methods of Conveying Test Directions on Performance.
Bragman, R.; April 1981, 34 p.

The investigation studied the effect of different methods of conveying test instructions on the performance of 54 deaf children (6 to 8 years old) on pattern recognition tasks. Ss were randomly assigned to one of three methods of conveying test instructions: simultaneous communication method, pantomime method, and demonstration method. Ss were then presented with pattern recognition tasks with directions conveyed according to the group assignment. Results indicated that different methods of conveying test instructions significantly affected the performance of deaf children on pattern recognition tasks.